

THE UNIVERSITY OF LAHORE

REQUEST FOR PROPOSAL (RFP)

Enterprise Data Lake & Data Warehouse Implementation,
SAP S/4HANA 10-Year Historical Data Archival,
and Controlled Research Data Sharing Platform

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Document Control

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Key Dates

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All dates are indicative and may be revised by the Organization at its sole discretion. Any change will be communicated to all registered bidders in writing and/or published as an addendum to this RFP.

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1. Introduction & Background

1.1 About the Organization

The University of Lahore (“UOL” or “the Organization”) is one of Pakistan’s largest private-sector higher education and research institutions, chartered by the Government of Punjab and recognized by the Higher Education Commission (HEC) of Pakistan. The University operates multiple enterprise and departmental systems supporting finance, academics, admissions, examinations, research, human resources, quality assurance, alumni and stakeholder engagement functions across its campuses.

1.2 Current Landscape

The University has operated SAP S/4HANA as its core enterprise system for approximately ten (10) years. Over this period, a very large volume of transactional and master data has accumulated in the production HANA database across financial accounting, controlling, materials management, human capital management, and related modules. Because HANA is an in-memory platform, this continuous growth directly drives memory footprint, hardware sizing, backup and recovery windows, system performance, and total cost of ownership. In parallel, data is distributed across numerous departmental and satellite systems, with reporting largely performed at individual system level, resulting in fragmented, non-reconciled, and effort-intensive institutional reporting.

1.3 Strategic Direction

The Organization has resolved to undertake a coordinated data modernization program with the following strategic pillars:

- **Ten-year historical cut-off:** The University intends to define a historical cut-off date and take a clean “cut” of the approximately ten (10) years of SAP S/4HANA data accumulated to date. All in-scope data up to the cut-off shall be extracted, validated, and preserved outside the production HANA database.
- **Historical data preservation:** The complete in-scope historical dataset from SAP S/4HANA (and, where in scope, other systems) shall be preserved in a centrally governed Data Lake, with curated, query-ready historical subject areas published into an enterprise Data Warehouse for historical reporting.
- **Production data volume reduction:** Once preservation is verified, reconciled, and formally signed off, the University intends to remove the preserved historical data from the production S/4HANA database using SAP-supported archiving, data aging, and deletion procedures — keeping the production system lean and performant while remaining compliant with statutory retention requirements. The selected vendor must supply the strategy, runbooks, and reconciliation evidence supporting this step.
- **Historical data accessibility (“call-back” capability):** Business users, auditors, and authorized applications — including SAP S/4HANA and the Organization’s BI tools — must be able to retrieve, query, and report on historical data on demand, through governed interfaces (e.g., federation/virtualization, APIs, semantic layer, and self-service BI), without the historical data residing in the production HANA database.
- **Institution-level reporting across the full timeline:** A governed Data Warehouse shall provide standardized, reconciled, single-version-of-truth reporting across finance, academics, admissions, research, HR, quality assurance, and engagement functions —

seamlessly spanning archived historical data (pre-cut-off) and live S/4HANA data (post-cut-off) as one continuous timeline.

- Controlled research data sharing: The Organization intends to share approved research datasets with local and international academic institutions, government bodies, and research organizations in a secure, controlled, auditable, and policy-compliant manner.

1.4 Purpose of this RFP

This Request for Proposal (RFP) invites technically and financially capable vendors to submit comprehensive proposals for the design, implementation, migration, commissioning, and support of the solution described herein. This RFP supersedes the previously issued Request for Information (RFI) on the same subject. Responses to the RFI, where submitted, do not confer any advantage or obligation in this procurement.

2. Definitions & Abbreviations

Term	Definition
Organization / Purchaser	The University of Lahore (UOL), the entity issuing this RFP
Bidder / Vendor	Any firm or consortium submitting a proposal in response to this RFP
SI	System Integrator / successful bidder awarded the contract
Historical Cut-Off	The agreed date defining the ~10-year historical dataset to be archived from production SAP S/4HANA into the Data Lake
SAP S/4HANA / HANA	The University's production ERP system and its in-memory database, in operation for ~10 years
DL	Data Lake — repository for raw, semi-structured, and historical data
DWH / EDW	(Enterprise) Data Warehouse — governed repository for curated, modeled, reporting-ready data
ETL / ELT	Extract, Transform, Load / Extract, Load, Transform pipelines
CDC	Change Data Capture
MDM	Master Data Management
RDSP	Research Data Sharing Platform — the controlled external data sharing capability described in Section 4.8
DSA	Data Sharing Agreement
RBAC / ABAC	Role-Based / Attribute-Based Access Control
SLA	Service Level Agreement
PoC	Proof of Concept
UAT	User Acceptance Testing
DR / BCP	Disaster Recovery / Business Continuity Planning

Term	Definition
PII	Personally Identifiable Information

3. Project Objectives

The successful solution shall achieve the following measurable objectives:

1. Migrate and preserve 100% of agreed in-scope historical SAP S/4HANA data (approximately ten years of transactional and master data across all productive modules, up to the agreed historical cut-off) into the Data Lake with documented, auditable reconciliation between source and target.
2. Enable a verified, SAP-supported reduction of the production HANA data footprint after preservation sign-off — through an archiving / data aging / deletion strategy with runbooks, sequencing, and reconciliation evidence — while maintaining compliance with statutory retention requirements.
3. Provide governed, performant, on-demand access to historical data for business users, auditors, regulators, and downstream applications, including from within S/4HANA and BI front-ends, with agreed query response SLAs.
4. Establish an enterprise Data Warehouse delivering standardized, reconciled, institution-level reporting and dashboards across finance, academics, admissions, research, HR, quality assurance, and engagement functions.
5. Establish ongoing ingestion pipelines from the live SAP S/4HANA system and departmental systems so that the DL/DWH remains continuously current after the cut-off (batch, micro-batch, and/or CDC as appropriate), with a gapless, duplicate-free handover between the final historical extraction and ongoing feeds.
6. Implement enterprise-grade data governance: data catalog, business glossary, data lineage, data quality monitoring, master data alignment, retention, and audit controls.
7. Implement a Research Data Sharing Platform enabling secure, policy-controlled, auditable sharing of approved datasets with local and international academic, government, and research bodies, including anonymization/pseudonymization, approval workflows, and usage tracking.
8. Ensure compliance with applicable laws, regulations, and policies of Pakistan (including applicable data protection legislation, sectoral regulators, and — where applicable — public procurement rules), as well as contractual and ethical obligations attached to research data.
9. Transfer knowledge and build internal capacity such that the Organization can independently operate, extend, and govern the platform after the support period.

4. Current State Environment (Indicative)

The following information is indicative and provided to assist bidders in sizing their proposals. Exact volumetrics, module footprints, and system inventories will be confirmed during due diligence with shortlisted bidders under NDA.

Attribute	Indicative Detail
Production ERP	SAP S/4HANA — in production for ~10 years; modules include FI, SLCM, MM, FICA, HCM, PS, PM
S/4HANA Database Size	Approx. 500 TB in-memory plus archives — to be confirmed
Departmental Systems	Student Information System, LMS, Admissions Portal, Examination System, Research Management System, QEC tools, CRM/Engagement, Library, HR satellite apps
BI & Reporting Tools	e.g., SAP BO/BW, Power BI, Tableau
Hosting Preference	On-premises in existing data center
User Base	Approx. 200 of staff, faculty, analysts, and report consumers
Network & Security	Existing AD/LDAP, SSO, firewall, SIEM landscape

Bidders must state all sizing assumptions explicitly in their proposals. A data due diligence window will be provided to shortlisted bidders prior to contract finalization to validate assumptions.

5. Scope of Work

The scope of work comprises the following work streams. Bidders must respond to each work stream individually and complete the Compliance Matrix at Annexure C.

5.1 Work Stream 1 — Solution Architecture & Design

- Conduct discovery and requirements-validation workshops with business and IT stakeholders.
- Produce an end-to-end target architecture covering Data Lake, Data Warehouse, integration/ingestion layer, semantic/consumption layer, governance layer, security architecture, and the Research Data Sharing Platform.
- Define lakehouse/warehouse zoning (e.g., raw/bronze, standardized/silver, curated/gold), naming standards, partitioning, file/table formats, and storage tiering (hot/warm/cold/archive) for ten years of historical data plus future growth.
- Define dimensional/data-vault models for institutional subject areas: finance (GL, AP, AR, assets, budgeting), procurement & inventory, HR & payroll, students & admissions, examinations & academics, research & grants, quality assurance, and engagement/alumni.
- Provide capacity plan and 5-year growth projection; propose deployment topology (on-premises, cloud, or hybrid) with a data residency and sovereignty assessment relevant to Pakistan and to international research collaboration.
- Deliver High-Level Design (HLD) and Low-Level Design (LLD) documents, subject to formal Organization sign-off before build.

5.2 Work Stream 2 — SAP S/4HANA Historical Data Extraction & Archival

- Extract approximately ten (10) years of historical transactional and master data, up to the agreed historical cut-off, from the production SAP S/4HANA system — including configured modules, custom (Z) tables, long texts, attachments/DMS content, change documents (CDHDR/CDPOS), and any existing ADK archives where in scope.
- Use SAP-supported extraction mechanisms (e.g., CDS/ODP extractors, SLT, RFC/BAPI, database-level extraction where licensed and supported), executed within agreed windows and without degrading the live production system or breaching SAP licensing terms; bidders must explicitly state their extraction approach, expected production impact, and any licensing implications.
- Preserve business context: extracted data must remain fully interpretable independently of the source system — including domain values, configuration tables, currency/unit conversions, fiscal year variants, and organizational structures — even after the data is removed from production S/4HANA.
- Perform field-level and aggregate-level reconciliation (record counts, control totals, financial balances by period/company code) with signed-off reconciliation reports per module per fiscal year.
- Implement legally compliant retention and immutability controls (e.g., WORM/object-lock for audit-relevant financial records) aligned with statutory retention requirements applicable to the Organization.
- Support audit/tax inspection scenarios: provide read-only access patterns and standard extraction formats for auditors and regulators over historical data.

- Provide a documented, SAP-supported strategy and runbook for post-preservation data volume reduction in production S/4HANA — covering archiving objects, data aging, and deletion procedures, sequencing and dependency handling, residence/retention rules, and verification steps. Execution of the in-system archiving/deletion runs may be performed by the University's SAP BASIS team per the runbook, or contracted as an option — see Price Schedule.

5.3 Work Stream 3 — Data Lake Implementation

- Implement the Data Lake as the system of record for raw and historical data: the archived 10-year S/4HANA historical dataset, ongoing feeds from live S/4HANA, departmental systems, files, and semi-structured/unstructured research data.
- Support structured, semi-structured (JSON, XML, logs), and unstructured (documents, images, instrument outputs) data.
- Implement schema management, open table formats (e.g., Delta/Iceberg/Hudi or equivalent), compression, lifecycle policies, and tiered storage.
- Implement ingestion frameworks supporting batch, micro-batch, streaming, and CDC; all pipelines must be metadata-driven, restartable, idempotent, monitored, and alert-enabled.
- Provide sandbox/exploration zones for data scientists and institutional researchers with governed access to lake data.

5.4 Work Stream 4 — Data Warehouse Implementation

- Implement the enterprise Data Warehouse with curated, conformed, reporting-ready models for the subject areas in Section 5.1.
- Build a semantic layer with certified business definitions, KPIs, and hierarchies for self-service consumption.
- Develop an agreed initial catalogue of institutional reports and dashboards [indicatively 30–50 reports/dashboards — to be finalized during design], including statutory, management, accreditation (e.g., HEC/QEC), and board-level reporting.
- Integrate with the Organization's existing BI tools [e.g., Power BI / Tableau / SAP Analytics Cloud — to be confirmed] via live and import connectivity, with row-level security aligned to organizational roles.
- Implement historical-vs-current unified views: reports must seamlessly span archived historical data (pre-cut-off) and live S/4HANA data (post-cut-off) as one continuous timeline, transparently to report consumers.

5.5 Work Stream 5 — SAP S/4HANA Ongoing Integration & Historical Call-Back

- Establish ongoing ingestion from the live SAP S/4HANA production system into the DL/DWH (CDS-based extraction, ODP, SLT, or equivalent), keeping institutional reporting continuously current without degrading production performance.
- Ensure a gapless, duplicate-free handover at the historical cut-off: the final historical extraction and the start of ongoing ingestion must be sequenced and reconciled so that no transactions are missed or double-counted.

- Implement a governed “historical call-back” capability so authorized users and applications can query historical data on demand: options may include data federation/virtualization, REST/OData APIs, side-car HANA views, embedded BI tiles, or links from S/4HANA transactions to historical record viewers. Bidders must describe at least two viable patterns with pros, cons, performance characteristics, and licensing impact.
- Coordinate with the University’s SAP BASIS, functional, and support teams (and SAP support partner, where applicable) on extraction windows, interface contracts, the data-volume-reduction runbook, and production-impact safeguards for the live S/4HANA system. The bidder is responsible for clearly delineating responsibilities in a RACI included in the proposal.

5.6 Work Stream 6 — Departmental & Non-SAP Source Integration

- Onboard the agreed departmental systems (indicative inventory in Section 4) onto the ingestion framework, with documented source-to-target mappings.
- Implement data quality rules at ingestion (validity, completeness, conformity, uniqueness, referential integrity) with quarantine and stewardship workflows for failed records.
- Provide a repeatable source-onboarding playbook and templates so the Organization can add new sources post-project with minimal vendor dependency.

5.7 Work Stream 7 — Data Governance, Security & Audit

- Deploy and configure a data catalog with automated metadata harvesting, business glossary, data ownership/stewardship assignments, and end-to-end lineage from source to report.
- Implement data classification (e.g., Public / Internal / Confidential / Restricted / Special-Category PII) and apply protection controls accordingly.
- Implement RBAC/ABAC integrated with the Organization’s identity provider (AD/Azure AD/LDAP) and SSO/MFA; enforce least privilege, segregation of duties, and time-bound elevated access.
- Implement encryption in transit (TLS 1.2+) and at rest (AES-256 or equivalent), key management, masking/tokenization for sensitive fields, and database/file activity monitoring.
- Provide comprehensive, tamper-evident audit logging of access, queries, exports, administrative actions, and data sharing events; integrate logs with the Organization’s SIEM.
- Define and implement data retention, archival, and defensible deletion policies per data class, aligned with statutory and institutional requirements.
- Support compliance with applicable Pakistani data protection legislation and regulatory guidance, and with cross-border transfer requirements for international research data sharing; deliver a Data Protection Impact Assessment (DPIA) for the RDSP.

5.8 Work Stream 8 — Research Data Sharing Platform (RDSP)

The Organization intends to share approved research datasets with local and international academic institutions, government bodies, and research organizations in a controlled manner. The bidder shall implement an RDSP capability comprising:

- Dataset publication workflow: A governed workflow by which internal data owners nominate datasets for sharing, with multi-stage approval (data owner → research office / ethics or IRB review where applicable → data governance → legal), versioning, and documented terms of use.
- Anonymization & de-identification: Tooling and processes for anonymization, pseudonymization, aggregation, k-anonymity/suppression techniques, and synthetic data options for sensitive datasets, with documented re-identification risk assessment per release.
- Tiered access models: (a) open/public datasets via a catalog portal; (b) registered access with click-through terms; (c) controlled access requiring an executed Data Sharing Agreement (DSA), institutional verification, and named-user credentials; and (d) secure enclave / “data visiting” access where data cannot leave the environment and only approved outputs are released (output checking workflow).
- External researcher portal: A catalog of shareable datasets with metadata, data dictionaries, citation/DOI support, request submission, status tracking, and secure delivery (secure download, API access with keys/OAuth, or enclave workspace).
- Agreement & license management: Templates and registry for DSAs, MoUs, and data licenses (e.g., CC variants for open data); expiry, renewal, and revocation handling, including remote revocation of credentials and API keys.
- Usage monitoring & audit: Per-dataset, per-user usage logs; download/API metering; breach detection and notification workflow; periodic compliance reports to the research office and data governance committee.
- Cross-border controls: Configurable policy controls for international sharing (e.g., geo-restrictions, additional approval steps, contractual clauses), reflecting Pakistani legal requirements and any funder/collaborator obligations.
- Interoperability: Support for standard metadata schemas (e.g., DataCite, Dublin Core, schema.org/Dataset), FAIR data principles, and integration hooks to institutional repositories and the data catalog.

5.9 Work Stream 9 — Testing, Cut-Over & Go-Live

- Provide and execute a full test strategy: unit, system, integration, performance/volume (against full 10-year dataset), security/penetration testing coordination, reconciliation testing, and UAT support with entry/exit criteria.
- Develop migration mock-run plan: at least two (2) full mock migrations of historical data with reconciliation sign-off prior to production migration.
- Prepare a go-live plan for the DL/DWH and reporting platform — including the final delta extraction at the historical cut-off, any temporary freeze or quiet windows, fallback/rollback procedures, and hypercare arrangements — without disruption to the live S/4HANA production system.

5.10 Work Stream 10 — Training, Knowledge Transfer & Documentation

- Deliver role-based training: platform administrators, data engineers, data stewards, BI developers, report consumers, research office staff, and security/audit teams; provide training materials, recordings, and hands-on labs.

- Provide complete documentation: architecture, LLD, source-to-target mappings, data dictionary, operations runbooks, DR procedures, governance SOPs, and RDSP policy/procedure manuals.
- Execute a structured knowledge transfer and shadowing plan with measurable competency sign-off by the Organization.

5.11 Work Stream 11 — Support, Maintenance & Service Levels

- Provide warranty support for a minimum of 12 months post final acceptance, covering defect resolution at no additional cost.
- Provide an annual technical support & maintenance offer for 3 optional years post-warranty (priced separately), including SLAs in Section 7.6, patching/upgrades, pipeline monitoring, and minor enhancements pool of 40 person-days/year
- Provide a transition-out plan ensuring the Organization (or a successor vendor) can assume operations without disruption at contract end.

5.12 Out of Scope (for clarity)

- Re-implementation, upgrade, or functional configuration changes to SAP S/4HANA itself; however, historical extraction, ongoing integration, and historical call-back interfaces with the live S/4HANA system are in scope.
- Procurement of end-user BI licenses already held by the Organization (bidders must state any additional licenses required by their solution).
- Execution of in-system archiving/deletion runs inside production S/4HANA (optional priced item; the strategy, runbooks, and verification approach are in scope under Work Stream 2).

6. Technical & Non-Functional Requirements

6.1 General

- Bidders may propose on-premises, cloud, or hybrid solutions; each option must include a data residency, sovereignty, latency, and total-cost analysis specific to Pakistan, and identify which data classes (if any) are proposed to reside outside Pakistan and the legal basis for doing so.
- Preference will be given to open standards, open table/file formats, and architectures that avoid hard lock-in; bidders must describe data egress/exit mechanisms and costs.
- All proposed software must be quoted with named editions, license metrics, and subscription terms; “to be determined” licensing will be treated as non-compliant.

6.2 Performance & Scalability

Requirement	Target (bidders to confirm or propose alternative with justification)
Standard DWH dashboard/report response	≤ 5 seconds for 90% of executions on curated models
Historical call-back queries (typical document/ledger lookups)	≤ 10 seconds for 90% of executions
Batch ingestion window (daily loads)	Complete within agreed overnight window [e.g., 6 hours]
CDC/near-real-time feeds (where in scope)	Latency ≤ [15] minutes
Concurrent BI users	[200] concurrent / [2,000] named users without degradation
Storage scalability	Linear scale-out to at least [3×] initial volume without re-architecture
Platform availability (production)	≥ 99.5% monthly, excluding agreed maintenance windows

6.3 Reliability, Backup & Disaster Recovery

- Automated backups with defined RPO $\leq$ [12 hours] and RTO $\leq$ [6 hours] for the DWH; RPO/RTO for the Data Lake raw zone to be proposed with cost options.
- Documented and tested DR strategy; at least one DR drill before final acceptance and annually during support.
- Immutability/object-lock for audit-relevant historical financial records.

6.4 Security & Compliance

- Alignment with ISO/IEC 27001 control objectives; bidders holding ISO 27001/SOC 2 certifications must attach evidence.
- Integration with the Organization's identity provider, SSO and MFA; privileged access management for administrative roles.
- Vulnerability management, hardening baselines (e.g., CIS benchmarks), and support for an independent penetration test prior to go-live.
- Compliance with applicable Pakistani data protection law and sector regulations; for international research sharing, support contractual safeguards and configurable cross-border policy controls.

6.5 Interoperability & Standards

- ANSI SQL access to curated layers; ODBC/JDBC and REST/OData APIs for consumption.
- Standard BI connectivity to Power BI / Tableau / SAP Analytics Cloud etc.
- Open metadata interchange (e.g., OpenLineage or equivalent) and standard dataset metadata schemas for the RDSP (DataCite/Dublin Core).

7. Implementation Methodology, Deliverables & Project Management

7.1 Phased Delivery (Indicative)

Bidders must propose a detailed phase plan; the Organization anticipates phases similar to the following and welcomes improvements with justification:

Phase	Indicative Contents	Indicative Duration
Phase 0 — Mobilization & Discovery	Project initiation, governance setup, discovery workshops, due diligence, finalized requirements & HLD	[4–6 weeks]
Phase 1 — Foundation	Platform provisioning, security & governance foundation, LLD, ingestion framework, catalog deployment	[6–10 weeks]
Phase 2 — S/4HANA Historical Archival	Extraction development against production S/4HANA, mock runs, reconciliation, historical load into Data Lake; curated historical subject areas in DWH	[12–20 weeks]
Phase 3 — Institutional DWH & BI	Subject-area models, semantic layer, priority reports/dashboards, departmental source onboarding (wave 1)	[10–16 weeks]
Phase 4 — Ongoing Integration & Call-Back	Ongoing ingestion from live S/4HANA, gapless cut-off handover, historical call-back interfaces, data-volume-reduction runbook handover, hypercare	[8–12 weeks]
Phase 5 — Research Data Sharing Platform	RDSP workflows, anonymization tooling, external portal, DSA registry, pilot releases with 2–3 partner bodies	[8–12 weeks]
Phase 6 — Stabilization & Handover	Performance tuning, DR drill, training completion, knowledge transfer sign-off, final acceptance	[4–6 weeks]

7.2 Key Deliverables

- Project Charter, detailed Project Plan (WBS), and RACI.
- HLD and LLD documents; data models; source-to-target mappings; data dictionary.
- Migration strategy, mock-run reports, and signed reconciliation reports per module/fiscal year.
- Configured platform environments (DEV/QA/PROD at minimum), ingestion pipelines, DWH models, semantic layer, and agreed reports/dashboards.
- Governance artifacts: catalog, glossary, lineage, classification scheme, DQ rulebook, retention schedule, DPIA for RDSP.

- RDSP: portal, workflows, anonymization toolkit & SOPs, DSA/license templates registry, pilot release reports.
- Test strategy, test cases, test/UAT reports; cut-over and rollback plans; hypercare report.
- Training materials & records; operations runbooks; DR plan & drill report; transition-out plan.

7.3 Project Governance

- Steering Committee (monthly), Project Working Group (weekly), and escalation matrix; the bidder shall provide a dedicated Project Manager and named key personnel (CVs evaluated; substitutions require Organization approval and equal-or-better replacements).
- Progress reporting: weekly status reports, RAID logs, and earned-value or milestone-based tracking.

7.4 Acceptance

- Each phase is subject to formal acceptance against documented criteria. Final acceptance requires: complete reconciled historical migration; agreed reports operational; performance/SLA tests passed; security test findings (high/critical) remediated; training and KT sign-off; and RDSP pilot completion.

7.5 Change Control

- Changes to agreed scope follow a formal change control procedure with written approval prior to execution; the proposal must include blended and role-based rate cards valid for the contract term for change requests.

7.6 Support SLAs (Warranty & AMC)

Severity	Definition	Response	Resolution / Workaround
S1 — Critical	Platform down, data loss risk, security incident, statutory reporting blocked	≤ 1 hour	≤ 8 hours
S2 — High	Major function degraded; no workaround	≤ 4 hours	≤ 2 business days
S3 — Medium	Function degraded; workaround exists	≤ 1 business day	≤ 5 business days
S4 — Low	Minor issue, cosmetic, or query	≤ 2 business days	Next agreed release

Service credits / penalties for SLA breaches shall apply as per the contract [indicatively up to X% of the applicable annual support fee]. Bidders must confirm acceptance or propose alternatives with justification.

8. Vendor Qualification (Mandatory Eligibility Criteria)

Bidders failing any mandatory criterion will be disqualified. Evidence must be attached as indicated.

#	Mandatory Criterion	Evidence Required
M1	Legally registered entity authorized to do business; [registered in Pakistan, or international firm bidding with a registered local partner/JV]	Registration, NTN/tax documents, JV/consortium agreement if applicable
M2	Minimum [5] years in data warehousing / data platform implementation	Company profile, financials
M3	At least [2] completed engagements involving enterprise data warehouse / data lake of comparable scale ($\geq$ [5] TB or $\geq$ [10] sources) in the last [5] years	Client references with contactable referees, completion certificates
M4	At least [1] completed engagement involving SAP data extraction/archiving, SAP data volume management, or SAP system decommissioning	Reference & case study
M5	Certified personnel on the proposed platform stack and SAP data integration	Certificates & CVs of named team
M6	Average annual turnover $\geq$ [PKR 200 million / USD equivalent] over the last [3] financial years	Audited financial statements
M7	Not blacklisted by any government, regulatory, or public-sector entity	Affidavit / undertaking
M8	Bid security as per Section 10.4	Bid security instrument

Consortium/JV bids are permitted with a designated lead bidder bearing single-point responsibility. OEM/principal authorization letters (MAF) are required for all proposed proprietary software and cloud platforms.

9. Proposal Submission Instructions

9.1 Two-Envelope Submission

Proposals must be submitted in two-file, e-procurement, File A — Technical Proposal (no pricing whatsoever) and File B — Financial Proposal. Any pricing information found in the Technical Proposal will result in disqualification.

9.2 Technical Proposal Contents (in this order)

1. Covering letter on company letterhead, signed by an authorized representative.
2. Executive summary (max 5 pages).
3. Compliance Matrix (Annexure C) — clause-by-clause response: Comply / Partially Comply / Do Not Comply, with remarks.

4. Proposed solution architecture (diagrams plus narrative) covering all work streams in Section 5, explicitly including: SAP historical extraction approach, lake/warehouse design, S/4HANA call-back patterns (minimum two options), governance tooling, and RDSP design.
5. Bill of materials: all software, subscriptions, and (if applicable) hardware/cloud services with editions and license metrics — without prices.
6. Implementation methodology, detailed work plan, and milestone schedule.
7. Migration & reconciliation approach, including mock-migration plan and sample reconciliation report formats.
8. Data governance, security, privacy, and compliance approach, including draft DPIA outline for the RDSP.
9. Project team: org chart, named key personnel with CVs and certifications, onsite/offshore mix.
10. Relevant experience: minimum three (2) case studies with scope, scale, duration, and referee contacts.
11. Training, knowledge transfer, and documentation plan.
12. Support model, SLA confirmation, and transition-out approach.
13. Assumptions, dependencies, and Organization-side responsibilities.
14. Mandatory eligibility evidence (Section 8) and signed undertakings/forms (Annexures).

9.3 Financial Proposal Contents

1. Price Schedule per Annexure D, in [PKR / USD], inclusive/exclusive of taxes as specified, fixed for the proposal validity period.
2. Itemization: implementation services per work stream; software/subscription licenses (year-wise for 5 years); infrastructure/cloud consumption estimates with unit rates; training; warranty; optional AMC years; optional production S/4HANA data volume reduction (archiving/deletion execution); rate card for change requests.
3. Payment milestones proposed against deliverables (the Organization's indicative milestone-based payment schedule is at Section 10.3).

9.4 Submission Logistics

- Format: electronic submission via e-procurement portal.
- Address / portal: tenders.uol.edu.pk Deadline: as per Key Dates. Late submissions will be rejected.
- Proposal validity: minimum [120] days from submission deadline.
- Queries: in writing only, to projects@its.uol.edu.pk (UAN: +92-42-111-865-865, Ext. 5027), by the query deadline; responses will be shared with all bidders without attribution.

10. Evaluation Methodology & Commercial Terms

10.1 Evaluation Process

1. Stage 1 — Mandatory eligibility screening (pass/fail per Section 8).
2. Stage 2 — Technical evaluation (scored per Section 10.2). Bidders scoring below the technical threshold of [70] points will not proceed.
3. Stage 3 — Presentations / solution demonstrations and, at the Organization's discretion, a limited Proof of Concept (e.g., extraction and reconciliation of a sample SAP dataset and a sample historical call-back query). PoC performance may adjust technical scores within the published weighting.
4. Stage 4 — Financial evaluation of technically qualified bidders. Combined score: Technical [70]% + Financial [30]% (lowest evaluated price receives full financial marks; others pro-rated).

10.2 Technical Evaluation Criteria (100 points)

Criterion	Weight
Understanding of requirements & solution architecture quality (incl. lake/DWH design, scalability, openness)	20
SAP historical data migration approach, reconciliation rigor, and S/4HANA call-back design	20
Data governance, security, privacy & audit capability	12
Research Data Sharing Platform design (anonymization, tiered access, DSA workflow, cross-border controls)	12
Relevant experience, references & case studies (incl. SAP and education/public sector)	12
Team quality: key personnel CVs, certifications, local presence & support capability	10
Methodology, plan realism, risk management & quality assurance	8
Training, knowledge transfer & documentation	6

10.3 Indicative Payment Milestones

Milestone	% of Implementation Fee
Contract signing & mobilization (against bank guarantee)	[10]%
Approved HLD/LLD & platform foundation accepted	[15]%
Historical migration completed with signed reconciliation	[25]%

Milestone	% of Implementation Fee
DWH subject areas & priority reports accepted	[20]%
S/4HANA ongoing integration & call-back accepted (post hypercare)	[15]%
RDSP accepted incl. pilot releases	[10]%
Final acceptance & KT sign-off	[5]%

10.4 Securities & Guarantees

- Bid security: [PKR X / 2% of bid value] in the form of [bank guarantee / pay order], valid for [validity + 28 days].
- Performance guarantee: [10]% of contract value, valid through warranty period, from the successful bidder prior to contract signature.

10.5 General Terms & Conditions

- Confidentiality & NDA: All Organization data is confidential; the SI and its personnel shall execute NDAs; no data may be copied outside agreed environments; any use of production data in non-production environments requires masking and written approval.
- Data protection: The SI acts on documented instructions of the Organization with respect to personal data; sub-processors require prior written approval; breach notification within [24] hours of awareness.
- Intellectual property: All data, models, mappings, reports, configurations, and custom code developed under the contract are the property of the Organization; pre-existing vendor IP and third-party software remain with their owners under perpetual or term licenses as quoted.
- Liquidated damages: [0.5]% of contract value per week of unexcused delay against milestone dates, capped at [10]% of contract value.
- Termination: For material breach (with cure period), insolvency, or convenience with [60] days' notice; on termination the SI shall support orderly transition and return/destroy Organization data with certification.
- Governing law & dispute resolution: Laws of Pakistan; jurisdiction Lahore; disputes via negotiation, then arbitration under [Arbitration Act / institutional rules].
- Public procurement compliance: Where applicable, this procurement shall be governed by [PPRA] rules; in case of conflict, those rules prevail.
- The Organization reserves the right to accept or reject any or all proposals, annul the process, negotiate with the highest-ranked bidder, or split awards, without incurring liability, in accordance with applicable rules.

Annexure A — Indicative Source System Inventory

To be completed/confirmed during due diligence. Bidders should assume the following classes of sources for sizing:

#	System / Class	Data Types	Indicative Method
1	SAP S/4HANA — historical (~10 years up to the agreed cut-off)	Transactional & master data, change docs, attachments, ADK archives	One-time historical extraction
2	SAP S/4HANA — ongoing (post cut-off)	Ongoing transactional & master data	CDS/ODP/CDC ongoing
3	Student Information / Admissions / Examination systems	Structured DB data	Batch / CDC
4	LMS & academic platforms	Structured + activity logs	Batch / API
5	Research & grants management	Structured + documents	Batch / API
6	HR satellite, QEC, CRM/engagement, library, others	Structured / files	Batch / API / file drop

Annexure B — Bidder Profile Form

Field	Bidder Response
Legal name & registered address	
Year established / registration no. / NTN	
Local office(s) in Pakistan & headcount	
Lead bidder & consortium members (if any)	
OEM partnerships & certification levels	
Annual turnover (last 3 FYs)	
Authorized contact (name, email, phone)	

Annexure C — Compliance Matrix (Template)

Bidders must respond clause-by-clause to Sections 5, 6, and 7 using this format:

RFP Ref.	Requirement Summary	Comply / Partial / No	Bidder Remarks & Evidence Ref.
5.2	S/4HANA historical extraction incl. Z-tables, attachments, ADK archives; data-volume-reduction runbook		
5.5	Historical call-back: ≥ 2 viable patterns described		
5.8	RDSP tiered access incl. secure enclave / output checking		
6.2	Performance targets confirmed		
...	(continue for all clauses)		

Annexure D — Price Schedule (Template)

#	Item	One-Time (PKR)	Recurring / Year (PKR)
1	Implementation services — by work stream (WS1–WS10)		
2	Software licenses / subscriptions (itemized, 5-year view)		
3	Infrastructure / cloud consumption (unit rates + estimate)		
4	Training & knowledge transfer		
5	Warranty support ([12] months)	Included	—
6	Optional: AMC Year 2 / Year 3	—	
7	Optional: Production S/4HANA data volume reduction (archiving/deletion execution)		—
8	Rate card for change requests (by role)	—	
	Taxes (itemized) and Grand Total		

Annexure E — Integrity & No-Blacklisting Undertaking

[Standard undertaking on bidder letterhead affirming: no blacklisting by any government/public entity; no conflict of interest; no collusion or corrupt practice; acceptance of RFP terms; and authority of signatory. To be signed and stamped.]

Annexure F — Draft Data Sharing Principles for the RDSP

The following principles will govern external research data sharing and must be supported by the proposed solution:

1. Approved purpose & proportionality: data shared only for approved research purposes, at the minimum granularity necessary.
2. Lawful basis & ethics: releases subject to legal review and, where applicable, ethics/IRB clearance and participant consent constraints.
3. Tiered access: open, registered, controlled (DSA-bound), and enclave-only tiers, with stronger safeguards at each tier.
4. De-identification by default: direct identifiers removed; re-identification risk assessed and documented before each release.
5. Accountability & audit: every access, download, and output release is logged and reviewable; recipients are identifiable institutions/individuals bound by agreements.
6. Revocability: access can be suspended or revoked, and agreements enforced, including for international recipients.
7. Attribution & FAIR: datasets are findable, accessible (per tier), interoperable, and reusable, with citation/DOI support.