(FREQUENTLY ASKED QUESTIONS WITH ANSWERS/ CLARIFICATIONS)

Request for Proposals Information System

(Single Stage)

Design, Development, Implementation and Support of National Open Data Ecosystem (NODE)

Country:	**Pakistan**
Project Name:	**Digital Economy Enhancement Project**
Implementing Agency:	**Ministry of Information Technology and Telecommunication**
Loan No:	**75140-PK**
Project ID No:	**P174402**
RFP/ STEP Reference. No.	**PK-MOITT-546238-GO-RFP**

Phase - I

Serial No.	Clarification/Query requested by Bidder/ Proposer	Response by Purchaser
1.	Must all NODE components portal (ETL, API Gateway, AI/ML, and Sandbox) be provided as a fully integrated ecosystem?	Yes. Complete integrated ecosystem required. Modular/hybrid approaches acceptable provided all Section-VII requirements are fully met.
2.	Is any specific platform, AI model, or cloud provider mandated?	No specific product mandated. Proposers must justify the technology stack on interoperability, scalability, and Request for Proposal (RFP) standards alignment. The cloud provider must be an accredited entity with the Government of Pakistan.
3.	Who can provide and operate the hosting -government or vendor?	Vendor provisions preferred, who can configure, deploy, and manage the hosting under the Pakistan Cloud First Policy guidelines. Hosting cost must be quoted separately, and provider must be accredited with the Government of Pakistan.
4.	Are separate development, staging, and production environments mandatory?	Yes. Physically segregated environments with appropriate access controls, segmentation, and monitoring are required.
5.	Will the purchaser provide predefined datasets and on-boarding priorities at project initiation?	No fixed list upfront. On-boarding priorities will be provided progressively during implementation based on stakeholder engagement and demand.
6.	Is data freshness monitoring a mandatory platform feature?	Yes. Automated freshness monitoring, escalation workflows, and public freshness indicators are mandatory as per Section-VII.
7.	Should agencies manage manual updates or is automated synchronization expected?	Both manual publishing and automated synchronization must be supported. NDEL-based automated synchronization is encouraged and preferred to minimize manual intervention.
8.	Is WCAG accessibility compliance required?	Yes. All interfaces must comply with Web Content Accessibility Guidelines (WCAG) 2.1/2.2 minimum Level AA.
9.	Is multilingual support mandatory?	Yes. English, Urdu and preferably local languages compatibility are mandatory language requirements.
10.	Are operational support and managed services mandatory in the proposal?	Yes. Deliverable 6 (post go-live operations obligations) must be fully costed in the financial proposal.
11.	What is the commercial interpretation of Year-1 locked SLA pricing with optional activation?	Year-1 Service Level Agreement (SLA) cost is mandatory in the proposal; activation is at MOITT's discretion after the project closure. Years 2 and 3 are optional extensions exercisable at same terms.
12.	Does the SLA period overlap with implementation activities?	No. SLA commences after final project acceptance and full closure of all deliverables under the contract.
13.	Is the Supplier responsible for on-boarding new organizations during the SLA period?	Yes. Supplier continues on-boarding, ETL support, metadata governance, API enablement, Sandbox support, AI/ML readiness, data curation, and capacity building of the organization.
14.	What are the disaster recovery requirements?	Automated failover, off-site replication, regular Disaster Recovery (DR) drills, and defined Recovery Time Objective (RTO) / Recovery Point Objective (RPO) commitments required.

15.	Are knowledge transfer and source code handover mandatory contractual obligations?	Yes. Customized source code, documentation, run books, capacity building manual and all operational artifacts must be fully handed over on contract completion.
16.	Are independent security audits mandatory?	Yes. Quarterly security assessments, penetration testing, DR testing; and independent performance audits.
17.	Is local representation mandatory for foreign proposers?	Yes. Foreign proposers must demonstrate local representation within Pakistan for data curation and ingestion, organizational capacity building, maintenance, support, warranty, and training obligations.
18.	Is open-source software permitted?	Yes. Permitted with clear identification of all components and provision of applicable licensing information as outlined in Section-VII.
19.	What is the maximum implementation duration?	It will be outlined in the final contract but must be completed before the project closure in May 2028.
20.	Are certifications partially scored if expired or partially compliant?	No. Certifications must be valid at submission. Expired or non-compliant certifications will receive zero marks.
21.	Is API-first architecture required across all NODE components?	Yes. Interoperable, API-driven integration between all components and external systems is required.
22.	Is the supplier responsible for metadata governance and data quality assurance?	Yes. Metadata validation, dataset governance, quality assurance, and issue resolution are required throughout implementation.
23.	Must all professional resources be available throughout implementation and stationed locally?	Yes. Resources shall be available throughout implementation and CVs and commitment proposed through the Preliminary Project Plan (PPP) and implementation methodology. (Reference: Instructions to Proposers (ITP) 16.2(a)).
24.	Clarify roles in System Inventory Tables versus Proposal Pricing Forms.	Supplier shall provide all resources necessary for implementation and post-go-live support as per Section-VII requirements and outlined in System Inventory Tables (SIT).
25.	What documents are required for local representative arrangements?	Documentary evidence of capability and eligibility shall be submitted. (Reference: ITP 15.1; Section-IV).
26.	When is contract award expected?	The Purchaser aims to notify the successful Proposer and award the contract in Q3-Q4 2026, subject to the successful completion of the evaluation process and any applicable standstill periods.
27.	Will the government provide data center infrastructure?	No. Supply, installation, and operational responsibilities are governed by Section-VII. (Reference: Section-VII; ITP 17).
28.	Will the government provide an infrastructure resource sizing baseline?	Yes. Proposers must independently determine infrastructure sizing based on RFP technical requirements. (Reference: Section-VII; ITP 16.2(c)).
29.	What is the expected frequency of stakeholder workshops and meetings?	Recurring during the contract period. Supplier shall propose coordination methodology and frequency through the PPP. (Reference: ITP 16.2(a)).

30.	What is the process for stakeholder decision-making and dispute resolution?	Dispute resolution and governance governed by General Conditions of Contract (GCC)/Special Conditions of Contract (SCC) provisions. (Reference: Section-VIII GCC; Section-IX SCC).
31.	How are key team members defined and what is the personnel replacement approval process?	Personnel and staffing requirements governed under implementation arrangements. (Reference: Section-VIII; GCC). Any replacement during contractual obligation be approved prior by the client with equal or better qualified resource.
32.	What criteria apply when assessing replacement personnel qualifications?	Evaluation is based on Section-III qualification criteria. (Reference: Section-III-Evaluation and Qualification Criteria). Replacement should be equal or better qualified resource.
33.	Is there a cap on cumulative penalties for unauthorized personnel changes?	The penalty for an unauthorized change is 1% of the Contract Price (exclusive of Recurrent Costs). The aggregate amount of such penalties is capped at 10% of the Contract Price, as per the standard limit for liquidated damages in GCC Clause 28.2.
34.	Will trainees be expected to have prerequisite technical skills?	Supplier shall deliver training as part of information system obligations; trainees expected to have appropriate basic computer skills. (Reference: ITP 5.2(b)).
35.	Will knowledge transfer completion be assessed against measurable criteria?	Knowledge transfer deliverables and acceptance criteria governed under Section-VII requirements.
36.	Will defined review timelines apply to knowledge transfer completion report sign-off?	Acceptance procedures governed under GCC/SCC provisions for all deliverables. (Reference: Section-VIII GCC; Section-IX SCC).
37.	Will third-party delays be treated as beyond the vendor's control?	Force majeure and responsibility provisions governed under GCC. (Reference: Section-VIII GCC).
38.	Will vendor liability be limited for failures caused by third-party systems?	Contractual liabilities governed under GCC/SCC provisions. (Reference: Section-VIII GCC; Section-IX SCC).
39.	Will a deemed acceptance clause be included to prevent indefinite review delays?	Acceptance and sign-off procedures governed under contract conditions. (Reference: Section-VIII GCC).
40.	Will the signed contract and appendices be the sole binding documents?	The RFP (bidding documents complete in all aspects) is self-explanatory in the said regard.
41.	Will defect severity classification be applied for milestone acceptance decisions?	Acceptance testing requirements governed under Section-VII and VIII. (Reference: Purchaser's Requirements; GCC)
42.	How are consecutive days of operational use defined for acceptance purposes?	Operational acceptance provisions governed under GCC. (Reference: Section-VIII GCC)
43.	What is the timeframe for completing acceptance testing and issuing purchaser comments?	Acceptance procedures and timelines governed under contract conditions. (Reference: Section-VIII GCC)
44.	How is 'general scope' defined and what mechanism governing change order pricing?	The "general scope" is defined by the entire set of requirements in Section VII. A change falls outside this scope if it introduces new functionality not implicitly or explicitly required for the core platform. The process for change orders (GCC Clause 39, Section X Forms) and the Change Control Board will govern all change requests. Unit prices from the contract's priced bill of quantities may be used to value changes.
45.	What are the timelines and dispute mechanism for	The timeline for submitting change proposals will

	changing proposals?	be as specified in the Request for Change Proposal. If agreement on the price or schedule for a change cannot be reached, the change will not be implemented. This is without prejudice to either party's rights under the dispute resolution clause (GCC Clause 43).
46.	Does the contract provide the vendor with termination rights for non-payment?	Please refer to 41.3 Termination by Supplier | 41. Termination under Section VIII – General Conditions of Contract.
47.	Are milestone acceptance criteria clearly defined with formal sign-off timelines?	Yes. Technical evaluation and milestone obligations defined in Section-VII and IX. (Reference: Purchaser's Requirements; SCC)
48.	What is the payment approval timeline once an invoice is submitted?	Payment procedures and timelines governed under SCC. (Reference: Section-IX SCC)
49.	What is the process and timeline for refunding the performance security?	Performance security is governed under ITP 48 and Section IX. (Reference: ITP 48; SCC)
50.	How is performance security handled (frozen/released) during a dispute?	Performance security obligations and dispute provisions governed under GCC/SCC. (Reference: Section-VIII GCC; Section-IX SCC)
51.	Will alternative forms of performance security (e.g., cash retention) be accepted?	No. Performance security requirements defined under ITP 20, 48 and SCC. (Reference: Section II and IX).
52.	Is a parent company guarantee a mandatory requirement?	Regarding Parent company and allied areas/ entities, please refer to the following sections and sub-sections: ITP 31.2 | Section I – Instructions to Proposers (ITP) 31. Eligibility and Qualifications of the Proposer Form Fin 13.1 - Financial Situation: Historical Financial Performance | Section IV – Proposal Forms.
53.	Which technical and security standards are mandated for this procurement?	Technical and conformity requirements are specified in Section-VII. (Reference: ITP 16.2(c); Section-VII).
54.	Is there a defined onboarding framework for participating entities?	These may be defined when required during the course of project.
55.	What degree of architectural deviation from the reference architecture is acceptable?	As referred to in Section VII Clause 2. System Architecture Overview page 147, Supplier can suggest alternate architecture.
56.	What is long-term ownership and sustainability model post go-live?	Please refer to page 200 - Integration and operation support capabilities, technical fit, sustainable design.
57.	Can bidders adjust team composition and staffing beyond the roles specified?	With reference to Section IV (3.4), HR resources need to be planned by the Supplier as per their Project Rollout, and Implementation Plan. The Supplier needs to identify the required resources and ensure their availability and deployment to fulfill all project deliverables in accordance with the RFP requirements. Preferably located/available locally.
58.	Does the project involve migration of historical data from existing systems?	Data migration details are provided in Section VII clause 4.5.3 page 154.
59.	Is this procurement under World Bank regulations and are international firms eligible?	Yes. Conducted under WB procurement regulations for IPF borrowers; open to all eligible proposers. (Reference: ITP Clauses 4 and 5)
60.	What are the evaluation weightages for technical and	60% Technical and 40% Financial.

	financial proposals?	
61.	Is electronic/online submission of proposals permitted?	No. Proposals must be submitted physically; electronic submission is not permitted.
62.	What is the submission deadline and Technical Proposal opening arrangement?	Deadline: 11:00 AM PST, June 17, 2026. Technical proposals shall be opened publicly immediately after the deadline.
63.	Will late proposals be entertained?	No. Late proposals shall be rejected as per RFP provisions.
64.	Is a pre-proposal meeting scheduled and how will the meeting link be shared?	Virtual pre-proposal session: 11:00 AM PST, May 14, 2026. Meeting link available on MOITT website under 'Latest News / Tenders.'
65.	Is attendance at the pre-proposal meeting mandatory?	No. Non-attendance is not a cause for disqualification.
66.	What is the official channel for submitting RFP clarification requests?	Please refer to ITP 7.1 (Section II – Proposal Data Sheet (PDS).
67.	What is the deadline for prospective bidders to submit clarification requests?	Please refer to ITP 7.1 (Section II – Proposal Data Sheet (PDS).
68.	Will clarification responses be shared with all prospective bidders?	The queries along with responses and clarifications will be published on MoITT website in due course.
69.	May the Purchaser amend the RFP before the submission deadline?	Yes. Amendments may be issued as per the relevant sections given in the as issued RFP.
70.	Do addenda/corrigenda form an integral part of the RFP?	Yes. Every addendum is an integral part of the RFP and published on MoITT website accordingly.
71.	Can the submission deadline be extended by addendum?	Yes. At purchaser's discretion to allow adequate time to incorporate addendum into proposals.
72.	Must proposals be submitted under a two-envelope procedure?	Yes. Technical and financial parts are submitted simultaneously in separate sealed envelopes within one outer envelope. (Reference: ITP Clause 11).
73.	May financial information be included in the Technical Proposal?	No. Inclusion of financial data in the technical part shall render the proposal non-responsive. (Reference: ITP Clause 11.4).
74.	Are Joint Ventures (JVs) permissible?	Yes. JVs permitted; all members jointly and severally liable for contract execution. (Reference: ITP Clause 11.5).
75.	Is there a limit on the number of JV members?	Maximum number of JV members shall be 03 as specified in the Proposal Data Sheet (PDS). (ITP 4.1).
76.	What documentary requirements apply to a Joint Venture?	JV agreement or signed Letter of Intent (LOI) from all proposed JV members required. (Reference: ITP Clause 11.5).
77.	Is subcontracting permissible?	Yes. Subject to eligibility compliance; relevant subcontractor details required in the proposal. (Reference: ITP Clauses 11.2(h) and 16.4).
78.	Are firms from all countries eligible to participate?	Yes. Open to all eligible countries per WB procurement regulations and RFP eligible countries provisions.
79.	May state-owned enterprises participate?	Yes. Subject to eligibility requirements in the RFP and World Bank procurement regulations.
80.	Are World Bank-debarred or sanctioned firms eligible?	No. WB-sanctioned firms are ineligible during the applicable sanction period.
81.	Are site visits mandatory for prospective bidders?	No. Site visits are optional and at the proposer’s own cost; non-participation is not a disqualification ground.
82.	Will proposal preparation and submission costs be	No. All preparation and submission costs are

	reimbursed by the purchaser?	borne entirely by the proposer.
83.	What is the language requirement for proposal submission?	Proposals must be submitted in the language specified in the Proposal Data Sheet (PDS). Pg 13 Section 10.1.
84.	Can supporting documents in another language be submitted?	Yes. Provided they are accompanied by a notarized accurate translation into the RFP-specified language i.e. English as per ITP 10.1 (Section II – Proposal Data Sheet (PDS)).
85.	Are alternative/variant proposals permissible?	Only if specifically permitted in the PDS and per applicable RFP provisions. (Reference: ITP Clause 13).
86.	Will prices quoted in the proposal remain fixed during contract execution?	Yes. Prices are fixed and not subject to adjustment unless otherwise specified in the PDS. (Reference: ITP Clause 17.9).
87.	Must taxes and duties be included in quoted prices?	Reference to 3.1 Grand Summary Cost Table | Section IV - Proposal Forms, the price(s) and overall costing for the proposed solution including all the components and sub- components shall be inclusive of all the direct and indirect costs and taxes (as applicable and deductible) as per ITP no. 17.6.
88.	Is a Proposal-Securing Declaration mandatory?	Yes. Must accompany all proposals. (Reference: ITP Clause 20).
89.	Is a proposal security in the form of a bank guarantee required?	Governed by the applicable provisions in the PDS and RFP document. (Reference: ITP Clause 20; PDS).
90.	What is the proposal validity period?	Proposals must remain valid until December 31, 2026. (Reference: Section-II, ITP 19.1).
91.	Whether the project requires procurement of bare-metal infrastructure, co-location arrangements, or managed cloud hosting services under the Pakistan Cloud First Policy.	The project requires a cloud-hosted solution only. Procurement of physical hardware, bare-metal infrastructure, or co-location facilities is outside the scope of work. Bidders may utilize cloud services available within Pakistan and compliant with the Pakistan Cloud First Policy. Hosted cloud services from approved local cloud operators may be proposed.
92.	Request to relax the eligibility criteria requiring experience of two contracts valued at USD 3 million within the last five years (RFP Clause/Para 1.4.2).	The experience criteria have been established in accordance with World Bank procurement guidelines and are finalized; therefore, they are not subject to modification. Bidders may form consortiums or JVs in accordance with World Bank rules to satisfy eligibility requirements.
93.	Whether Google Cloud Platform (GCP) is permissible under the Pakistan Cloud First Policy	GCP may be utilized subject to compliance with the Pakistan Cloud First Policy and approval from the relevant competent authorities.
94.	Whether API documentation, integration specifications, and connector details for NDEL and related agencies will be shared with bidders?	API documentation, integration specifications, and relevant connector mechanisms will be shared prior to the applicable integration phase and associated deliverables. The solution architecture is expected to support multiple integration approaches, including APIs, file-based integrations, and direct database connectors.
95.	Whether CKAN or any specific open-source technology stack is mandatory for the Open Data Portal?	No specific technology stack or platform has been mandated. Bidders may propose open-source, custom-developed, third-party, or hybrid solutions, provided the proposed solution fully

		complies with the functional and technical requirements defined in Section-VII and Annexure 1 of the RFP.
96.	Clarification regarding mandatory technical compliance documentation and technical evaluation methodology?	Completion of Annexure-I/Tech-1 technical compliance matrix is mandatory. Failure to complete the compliance matrix may result in disqualification during technical evaluation. The evaluation methodology is objective, criteria-based, and governed by the detailed requirements and scoring framework defined in the RFP annexures.
97.	Clarification regarding cloud pricing methodology and whether on-demand or committed-use pricing models are required?	Bidders may propose pricing methodologies aligned with their proposed architecture, computational requirements, hosting model, and overall solution design. The pricing model may vary depending on the bidder's proposed implementation approach and resource requirements for participating departments/ agencies.
98.	Readiness and availability of National Digital ID integrations and technical specifications?	The proposed architecture has been designed to flexibly accommodate future National Digital ID integrations. Current RFP documentation and reference architecture provide sufficient information for solution design, while additional technical specifications and integration details will be shared in alignment with project milestones and integration phases.
99.	Clarification regarding cybersecurity audit obligations, approved cybersecurity authorities, and acceptable cybersecurity resource requirements?	Cybersecurity compliance requirements and applicable policies are governed by the RFP's compliance and legal obligations. National CERT (NCERT/MOITT) will serve as the relevant cybersecurity authority. Bidders may propose either a single cybersecurity specialist or multiple cybersecurity resources, provided all required security functions and obligations are adequately covered.
100.	Request for specification of expected data formats, migration structures, and handling of multiple unknown formats?	Anticipated data formats may include CSV, XLS/XLSX, XML, JSON, GeoJSON, APIs, databases, PDFs, and other structured or semi-structured formats. Bidders are expected to design a flexible ETL/ELT and migration mechanism capable of accommodating varying and evolving data structures and ingestion methods.
101.	Whether translation into English and Urdu is mandatory and whether multilingual data/content support is required?	No language restriction has been imposed. The system should support multilingual content and data ingestion capabilities, including English, Urdu, regional languages, and potentially other international languages where applicable.
102.	Whether the Open Data Portal is intended solely for storage or whether AI/ML, analytics, sandbox, and advanced capabilities are also required?	The platform is not limited to basic data storage functionality. The scope includes broader capabilities such as AI/ML features, API-first architecture, sandbox functionality, advanced analytics, and related intelligent data services as detailed in Section-VII of the RFP.
103.	Request for a definitive list of government departments/agencies planned for integration into the	The proposed system architecture is intentionally designed to remain flexible and scalable to

	platform?	accommodate evolving integration requirements. Accordingly, no fixed or exhaustive list of integrating departments/agencies has been prescribed at this stage.
104.	Whether harvesting and ingestion of data from external portals and external open-data platforms is required?	The proposed solution should support harvesting, ingestion, and integration of data from external open-data portals and related external systems where required.
105.	Whether phased implementation, MVP-based rollout, or accelerated deployment approaches are acceptable?	Bidders may propose phased implementation, Minimum Viable Product (MVP)-based deployment, or accelerated rollout strategies. Solutions capable of delivering core functionalities within shorter timelines, while maintaining required quality standards, may receive preference during technical evaluation.
106.	Clarification regarding technical evaluation criteria and whether out-of-the-box solutions receive preference over customized solutions?	Technical evaluation will be conducted through an objective, criteria-based methodology defined in the RFP annexures. No exclusive preference has been assigned to out-of-the-box solutions. Open-source, customized, third-party, or hybrid implementations are all acceptable provided they satisfy the prescribed technical and functional requirements.
107.	Whether ELT/Data Lake architecture may be proposed instead of conventional ETL architecture?	The architecture provided in the RFP is reference architecture only. Bidders are free to propose ELT, Data Lake, additional middleware, or alternative architectural layers as part of their technical solution, provided overall compliance with project requirements is maintained.
108.	Whether subcontractor experience is acceptable toward eligibility requirements and clarification on JV documentation requirements?	As per the relevant sections of the RFP (Section III, Sub- Factor 1.4.2), subject to meeting all the other requisites, the specific experience requirement for a JV is an aggregate of the experience of all members. It is not required to be solely fulfilled by the Lead Bidder, provided the total aggregate experience meets the specified threshold.
109.	Clarification regarding what qualifies as “similar experience” under the USD 3 million experience requirement?	Similar experience should substantially relate to software/system implementation activities such as ETL/ELT, AI/ML, APIs, data migration, CKAN/Open Data Platforms, digital platforms, or related enterprise software implementation services. Hardware-centric or infrastructure-only projects, such as civil/data center construction activities, will not qualify as substantially similar experience. In general, more than 50% of the project scope/value should substantially relate to software/system implementation activities.
110.	Whether general software development experience qualifies under the eligibility criteria?	Only experience directly relevant to the proposed solution scope and required implementation activities will be considered qualifying experience. Generic or unrelated software development experience may not satisfy the eligibility requirements.
111.	Clarification regarding publication of bidder queries and official responses submitted through email or	All bidder queries received through official communication channels, along with

	official channels?	corresponding official responses, will be published on the designated project website in the interest of transparency. Where necessary, formal addenda may also be issued. Additional bidder questions may be submitted within the prescribed deadline, generally up to five days prior to the proposal submission date.
112.	Clarification regarding bid security/bid bond requirements and handling of financial information in proposals?	No bid bond is required. Proposers are required to submit a Proposal Securing Declaration Form (ITP 20.1 and 20.3(d)). Financial proposals must remain completely separate from technical proposals, and inclusion of financial information within the technical proposal shall result in non-responsiveness of the proposal.
113.	For Annex A–E scoring, if a feature is available through configuration or an official plugin/module of the proposed platform, should it be marked as "Out of the Box", provided no custom code development is required?	Yes. Where a feature is available through native configuration, standard platform capabilities, or officially supported modules/plugins/extensions of the proposed solution, and no custom software development is required, the feature may be considered and scored as "Out of the Box". However, the Supplier must clearly identify the relevant module/component and provide documentary evidence, references, and implementation approach demonstrating such capability. The purchaser reserves the right to verify the extent of configuration effort and operational readiness during technical evaluation.
114.	Where the proposed solution uses a combination of open-source platforms, official extensions, and custom integration, will each feature be evaluated individually based on the evidence for that feature, or will the entire module be scored based on the lowest scoring component?	Evaluation will primarily be conducted feature-wise against the applicable rated criteria and technical requirements. Suppliers are expected to provide explicit evidence and traceability for each requirement/item being evaluated. Where a module consists of multiple components, the purchaser may assess the overall operational maturity, integration complexity, maintainability, and dependency on custom development in determining the final score for that requirement.
115.	For open-source technologies where there is no traditional OEM, what will be considered acceptable evidence: official documentation, GitHub release documentation, standards documentation, implementation guides, or public case studies?	For open-source technologies, acceptable evidence may include official product/community documentation, official repositories and release documentation, implementation guides, standards references, architecture documentation, publicly available case studies, and verifiable production implementations. Suppliers should provide sufficient evidence demonstrating product maturity, supportability, security, scalability, and suitability for enterprise/government deployment.
116.	Can the purchaser provide an indicative list or category-wise breakdown of the initial government organizations expected to be on boarded under Deliverable 6A–6E?	The initial onboarding is expected to include selected federal entities and may subsequently expand to provincial and associated public sector organizations in a phased manner. The exact onboarding sequence shall be finalized during implementation in consultation with the Purchaser and relevant stakeholders. Proposers are advised to design the solution with sufficient

		scalability and flexibility to support onboarding across multiple tiers of government.
117.	Can the purchaser provide indicative data volume assumptions for pricing and infrastructure sizing, including expected number of datasets, average dataset size, update frequency, file formats, API-based sources, database sources, and real-time/near-real-time data feeds?	The Purchaser expects proposers to recommend and size the infrastructure based on internationally accepted practices, proposed architecture, anticipated scalability, and requirements stated in the RFP. The ecosystem is expected to support structured and unstructured datasets, APIs, databases, and near real-time integrations from multiple government entities. Suppliers should clearly state all sizing assumptions, constraints, dependencies, and scalability methodology in their proposals. Please also refer to clause 1.11 "Infrastructure Sizing and Performance Requirements" of sub section B under the Section-VII Purchaser Requirements.
118.	For the AI/ML Repository, please confirm that the requirement is for model artifact storage, metadata, versioning, governance, publishing, and API-based access and not for full-scale model training, GPU-based inference, or MLOps compute infrastructure?	The primary intent of the AI/ML Repository under this procurement is to support repository management, governance, metadata management, versioning, discoverability, controlled publishing, and API-based access/integration capabilities. Large-scale AI model training infrastructure, GPU based inference, extensive MLOps compute environments are not part of the requirements.
119.	For the API Gateway, can the Purchaser provide indicative usage assumptions, including expected number of APIs, expected number of registered users/developers, expected API calls per month, rate-limit expectations, public vs authenticated usage, and any subscription/licensed access models?	Exact usage volumes cannot be guaranteed at this stage and may evolve over time. Suppliers are expected to propose a scalable API management architecture capable of supporting growth in APIs, consumers, integrations, and transaction volumes across government ecosystems. The proposed solution should support public and authenticated APIs, throttling/rate limiting, monitoring, analytics, access management, and policy-based governance. Suppliers should clearly document all assumptions used for sizing and costing. Please also refer to clause 1.11 "Infrastructure Sizing and Performance Requirements" of sub section B under the Section-VII Purchaser Requirements.
120.	Should the Open Data Portal support bilingual/multilingual user interface and metadata publication from Day 1, and if yes, which languages are mandatory for go-live?	Yes. The proposed solution should support multilingual capabilities, including both user interface and metadata extensibility. At minimum, English and Urdu language support is mandatory at go-live. Suppliers are strongly encouraged to design the platform for future extensibility to additional regional languages. Reference: Digital Pakistan Policy emphasizes accessibility and inclusivity across citizens and sectors.
121.	Can the purchaser clarify whether the supplier is expected to procure and manage cloud hosting directly, or deploy on a purchaser-designated / government-approved Pakistan Cloud First compliant environment?	The solution is expected to align with Pakistan Cloud First Policy and applicable government policies/frameworks.
122.	For the third-party security audit and compliance certificate, will the third-party auditor be procured and	Unless explicitly stated otherwise in the RFP or during contract finalization, suppliers are advised

	paid by the purchaser, or should the Supplier include the cost of the third-party audit/certification in the financial proposal?	to include all costs associated with mandatory compliance activities, certifications, assessments, audits, and related support services required for successful implementation and acceptance of the system.
123.	Please confirm whether a two-member Joint Venture comprising one Pakistan-based company and one international company is acceptable for this RFP?	Yes. Joint Ventures are permitted in accordance with the RFP provisions. A JV may comprise local and international firms, subject to compliance with the eligibility, qualification, and proposal requirements specified in the RFP.
124.	Please confirm whether either JV member may be nominated as the authorized JV representative / lead member, or whether the purchaser has any preference for the Pakistan-based member to act as the local lead?	Please refer to 4. Eligible Proposers (Section I – Instructions to Proposers (ITP)) and associated sections and sub-sections.
125.	For the minimum average annual turnover requirement, please confirm whether the financial turnover of JV members will be assessed on a combined JV basis, or whether one member must independently meet the full turnover requirement?	Please refer to 1.3.2 Average Annual Turnover (Section III – Evaluation and Qualification Criteria).
126.	For the financial resources / cash-flow requirement, please confirm whether the financial resources of JV members will be assessed on a combined JV basis, or whether one member must independently demonstrate the full required amount?	Please refer to 1.3.3 Financial Resources (Section III – Evaluation and Qualification Criteria).
127.	What is the Liquidated Damages (LD) rate per week of delay per deliverable? Does the LD cap differ between D1 to D5 and D6 sub deliverables, and is there a maximum aggregate LD cap?	The aggregate amount of such penalties is capped at 10% of the Contract Price, as per the standard limit for liquidated damages in GCC Clause 28.2.
128.	Please clarify if the procurement and provisioning of physical infrastructure (including servers, storage, networking, GPUs and etc.) are out of scope of this RFP, and that our financial bid should strictly exclude all hardware costs?	Pakistan Cloud First Policy Compliant Hosting & Infrastructure is to be provided by the vendor and costs should be included as per the Section-III, 4. Financial Evaluation part (d) Hosting & Infrastructure Costs – Pakistan Cloud First Policy Compliant.
129.	The RFP requires hosting costs to be a "binding" line item for the contractual duration (Section-III, 4.d.A and Section-VII, 3.0.6). Assuming if the procurement and provisioning of physical infrastructure are out of scope for this RFP, then could the purchaser provide an exhaustive list of what should be included under this line item (e.g., supplier management fees or specific cloud-native licenses)?	Pakistan Cloud First Policy Compliant Hosting & Infrastructure is to be provided by the vendor and costs should be included as per the Section-III, 4. Financial Evaluation part (d) Hosting & Infrastructure Costs – Pakistan Cloud First Policy Compliant.
130.	Is there an explicit mandate or preference for utilizing the National Information Technology Board (NITB) GovCloud? If GovCloud is utilized, will the purchaser provide a standard rate card for cost calculation, or should the supplier assume consumption costs will be borned by the purchaser?	No there is no such explicit mandate or preference for utilizing the National Information Technology Board (NITB) GovCloud (if any). It is the sole responsibility of the supplier to include the costs of hosting & infrastructure as per the Section-III, 4. Financial Evaluation part (d) Hosting & Infrastructure Costs – Pakistan Cloud First Policy Compliant. Supplier has to provision the hosting & Infrastructure to get the entire proposed solution up and running as per the requirements mentioned in Section-VII.
131.	The RFP mandates integration with the National Data Exchange Layer (NDEL) via four specific modes: Push, Pull, Federation, and Event-Driven Synchronization	The RFP intentionally defines the required interoperability and integration architecture patterns for NDEL, including Push, Scheduled Pull,

	(Section-VII, 1.9.1). What is the current technical maturity of NDEL? Are the specific APIs and security protocols for NDEL already finalized and documented for the Supplier's use?	Real-Time API Federation, and Event-Driven Synchronization modes. While NDEL is an ongoing national initiative, bidders are expected to design standards-based, modular, and API-driven integrations capable of operating with evolving national interoperability specifications. The architecture already specifies secure authenticated exchange, API gateway controls, OAuth/OpenID-based security enforcement, auditability, and governed exchange mechanisms. Final operational API specifications and onboarding procedures for participating agencies may evolve incrementally during implementation.
132.	Which 25 organizations are targeted for D6, what is the quantitative definition of 'successful onboarding', who bears the risk of agency noncooperation, and can alternative organizations be substituted?	The exact list of targeted organizations for D6 onboarding shall be finalized by the Purchaser in coordination with relevant stakeholders and may evolve during implementation phases. Successful onboarding generally refers to the establishment of compliant dataset publication capability, metadata governance alignment, operational integration through one or more approved ingestion/federation mechanisms, and successful participation within the NODE ecosystem. The platform architecture is intentionally federated and scalable to support varying organizational maturity levels. The Purchaser shall facilitate institutional coordination; however, the Supplier is expected to actively support technical onboarding, engagement, and enablement activities. Equivalent alternative organizations may be considered subject to Purchaser approval.
133.	Does the 500 to 750 concurrent web user metric apply strictly to authenticated platform users, or does it also encompass anonymous public portal traffic?	The concurrent user sizing requirements should be interpreted as encompassing the overall active platform ecosystem workload, including authenticated administrative users, developers, API consumers, and public portal usage patterns where applicable. Bidders are expected to design infrastructure sizing holistically against the workload assumptions defined in the RFP resource sizing sections.
134.	Do we need to connect to the national ID system for regular citizens, or is login only for government employees?	The platform needs to connected enterprise-grade Identity and Access Management systems with integration capabilities including SSO, MFA, OAuth2, OpenID Connect, RBAC, and integration with approved national or organizational identity systems where applicable. The exact onboarding flows for public citizens versus government officials may be finalized during detailed design and implementation phases based on applicable governance and security policies.
135.	The Request for Proposals (RFP) provides storage sizing benchmarks per dataset for Year 3, but what is the estimated baseline total volume, in Terabytes (TB) or Petabytes (PB), of existing data to be migrated or ingested during Year 1?	The RFP intentionally provides workload and sizing benchmarks to establish comparable bidder sizing assumptions over the 3-year operational horizon. Since participating organizations and onboarding maturity will evolve progressively, no fixed baseline Year-1 migrated data volume is

		mandated. Bidders are expected to propose scalable architectures capable of accommodating phased ingestion growth, heterogeneous datasets, metadata expansion, and federation scenarios.
136.	The RFP states the AI/ML Repository is a "library" and not an "execution environment" (Section-VII, 2.1.7.4.A). However, the sandbox requirements mention "inference testing" (Section-VII, 4.3.7 Subsystem 5) and the ability to "invoke model inference APIs" (Section-VII, D.7). Will the sandbox environment be expected to provide the compute resources for running these models, or is the supplier only providing the "registry" (metadata and storage)?	The AI/ML Analytical Model Library is not intended to function as a production-scale model training or inference platform. Its primary purpose is to serve as a governed repository, registry, and lifecycle management system for analytical models. However, within the Developer Sandbox Environment, the solution shall support controlled experimentation and testing workflows through secure invocation of external or third-party model inference APIs where applicable. Such capabilities are intended solely for development, experimentation, validation, and innovation use cases, and shall not be interpreted as a requirement for the Supplier to provide large-scale AI training or dedicated inference compute infrastructure as part of the NODE solution.
137.	Regarding the Data Extraction layer (Section-VII, 2.1.7.3.A), the Supplier must build adapters for diverse sources. For the initial onboarding of 25-30 organizations, what is the estimated number of "Legacy Systems" (direct DB connection) vs. "Modern Systems" (REST APIs)	The RFP intentionally supports heterogeneous onboarding models including APIs, relational databases, SFTP/file ingestion, XML/JSON feeds, spreadsheets, and external portals. The precise distribution between legacy systems and modern APIs across the initial onboarding entities is not fixed and may vary significantly by organization. Vendors are therefore expected to propose adaptable connector frameworks capable of handling mixed technical maturity environments.
138.	The supplier must maintain a team of 23 roles (Section-VII, 2.1.8.6). Can a single expert fulfill two roles if they meet the criteria for both (e.g., Lead Backend Engineer and Integration Specialist), or must each role be assigned to a unique individual?	The RFP defines mandatory minimum roles and competency requirements for the proposed team structure. The proposal must clearly demonstrate dedicated staffing capacity, continuity, and complete role coverage throughout the project lifecycle. Each mandatory role shall be fulfilled by a separate dedicated resource meeting the prescribed qualification and experience criteria. Assignment of a single individual against multiple mandatory roles shall not be considered compliant.
139.	Allow consortium and acceptance of subcontracting experience. As most of the International partners could not proceed with JV as numerous approvals required from respective HQs and documentation.	The RFP (bidding documents complete in all aspects) is self-explanatory in the said regard.
140.	In case local or GovCloud hosting options are not able to meet the specified Multi-AZ and RTO requirements, would the use of international hyper scale cloud providers (e.g., AWS/Azure) be considered acceptable, and how would such options be evaluated? Reference to Section 3.0.1 / 3.0.5: Mandates cloud-native hosting aligned with Pakistan Cloud First Policy (GovCloud/local preferred), with high availability architecture including multi-availability zone (or equivalent) deployment and	The RFP requires Pakistan Cloud First Policy compliant hosting and infrastructure. Bidders are expected to propose hosting architectures aligned with national ICT policies, sovereignty considerations, and the operational requirements defined in the RFP. Any proposed hosting architecture must comply with applicable national policy, security, governance, and data residency requirements.

	defined DR parameters (RTO/RPO).	
141.	In the event that NDEL is not fully operational at the time of implementation, how should interim integration approaches be handled, and would such deviations be treated under a formal Change Management process? Reference to Section 1.9.1: Architecture integrates primarily through the National Data Exchange Layer (NDEL).	The RFP intentionally defines standards-based interoperability and modular integration principles aligned with the evolving National Data Exchange Layer (NDEL) ecosystem. In the event that certain NDEL capabilities are not fully operational during implementation, bidders are expected to propose interim technically compliant integration approaches that preserve future compatibility with the intended NDEL architecture. Any material deviations, dependency constraints, or implementation sequencing adjustments shall be managed through the applicable governance, implementation planning, and formal change management mechanisms defined under the contract framework.
142.	For the purpose of financial proposal preparation, should baseline infrastructure assumptions include GPU-enabled environments for all sandbox workspaces, or would CPU-based environments be acceptable as a standard configuration? Reference to Section 1.11.1 / Annex C: Sizing targets 400-500 concurrent sandbox workspaces with a "configurable GPU option".	The Developer Sandbox Environment is intended primarily for controlled experimentation, development, testing, API consumption, and innovation enablement activities. The RFP does not mandate dedicated GPU-enabled environments for all concurrent sandbox workspaces as a baseline requirement. Bidders may therefore propose appropriately optimized and scalable architectures using CPU-based environments as the standard configuration.
143.	Is there a defined limit on the volume or number of historical datasets to be migrated under the Supplier's scope, or will this be determined during implementation? Reference to Section 2.1.8.4: Supplier must extract, transform, and migrate datasets from multiple existing public/private sources.	The RFP intentionally supports phased onboarding and heterogeneous integration scenarios across organizations with varying technical maturity levels. No fixed upper cap on the number or volume of historical datasets is explicitly prescribed at this stage. Bidders are expected to propose scalable ingestion, migration, and federation architectures capable of accommodating progressive onboarding, phased migration priorities, and evolving dataset volumes throughout implementation.
144.	In case actual usage (e.g., API transactions or storage) exceeds the projected levels outlined for Year 3, what mechanism will be applied to accommodate such variations within the contract framework? Reference to Section 1.11.1 / 3.0.6: Hosting costs are "binding," but Year 3 projects up to 1 million daily API transactions.	The workload projections and sizing benchmarks defined in the RFP are intended to establish a common baseline for comparable proposal evaluation and infrastructure sizing assumptions. In the event that actual operational consumption materially exceeds the defined benchmark assumptions during the contractual period, any resulting scaling requirements, infrastructure augmentation, or exceptional consumption adjustments may be addressed through applicable contract governance, SLA review, mutually agreed change management processes, or approved infrastructure scaling mechanisms in accordance with the contract framework.
145.	If the optional Year 1 SLA is not activated, could MOITT please clarify the expected support obligations of the Supplier immediately following Go-Live? Reference to Section-III (Evaluation): Year 1 SLA is quoted separately	Where the optional Year-1 SLA is not activated by the Purchaser, the Supplier shall nevertheless remain responsible for fulfilling all contractual obligations related to implementation

	and activated at MOITT's absolute discretion.	completion, defect rectification, warranty obligations, operational stabilization support, knowledge transfer, and successful operational acceptance as defined within the RFP and contract conditions. Any additional managed operational support services beyond the defined contractual baseline shall be governed by the applicable SLA activation provisions.
146.	Could MOITT clarify the minimum Full-Time Equivalent (FTE) expectations for the identified data curation roles, and whether part-time engagement would be acceptable? Reference to Section 2.1.8.6.2: Mandates a Data Curation Team (Lead, Metadata Specialist, Quality Analyst, Steward, Data Scientist).	The RFP defines mandatory minimum roles, responsibilities, and competency requirements for the Data Curation Team structure. The proposal must clearly demonstrate sufficient staffing capacity, continuity, and operational coverage throughout the project lifecycle.
147.	Can the purchaser clarify the expected scope boundaries of the NODE platform (what is included vs excluded)?	The detailed NODE platform requirements are explained in Section-VII. Supplier is advised to go through it in detail and ask targeted question (if any).
148.	What are the priority outcomes for Phase 1 of the project?	Phase 1 includes the full implementation and go-live of the system in-line with Section-VII Purchaser's requirements.
149.	How many government agencies or organizations are expected to be on boarded in each phase?	For Deliverable 6 (Platform Operationalization), the Supplier shall onboard a minimum of 25 and up to 30 participating organizations, structured in 5 batches of 5 organizations each (D6-A through D6-E).
150.	Are there existing open data portals or systems that must be integrated or replaced?	The RFP does not identify specific existing open data portals to be integrated or replaced. However, the system must support metadata harvesting from other National Open Data Portals and interoperability with the National Data Exchange Layer (NDEL).
151.	Is there a baseline dataset inventory available for participating agencies?	No pre-existing dataset inventory is provided by the Purchaser. The Supplier is responsible for conducting a structured 'As-Is' analysis of the current data landscape as part of Deliverable 1 (Project Foundation Pack — Business Requirements Validation Document), covering existing data management practices, current data formats and system architectures, and potential integration mechanisms for data ingestion.
152.	What is the expected data volume and growth projection over the next 3–5 years?	The RFP provides a 3-year sizing horizon, please go through Section-VII Purchaser's Requirement in detail.
153.	Will the purchaser provide existing infrastructure, API gateways, or identity services?	No. The Supplier is responsible for all hosting and infrastructure. All hosting and infrastructure costs shall be borne by the Supplier and clearly declared in the Financial Proposal. Cloud hosting analysis, selection, and deployment must strictly adhere to the Pakistan First Cloud Policy. The Purchaser does not commit to providing compute, storage, API gateways, or identity services.
154.	Are there specific standards required for interoperability (e.g., REST, OpenAPI, DCAT, CKAN compatibility)?	Yes. The primary authority is the National Data Governance Policy & Standards, however, the platform must comply with: API-First design

		principles and modern RESTful standards; DCAT, DCAT-AP, Dublin Core (DCMI), or equivalent catalog metadata standards; DDI Codebook / DDI Lifecycle for statistical/microdata datasets; ISO 19115, ISO 19139, INSPIRE metadata profile for geospatial datasets; RDF, JSON-LD, XML for machine-readable metadata; SPDX or equivalent for licensing metadata; and OpenAPI (or equivalent machine-readable API specification) for all API definitions. The primary authority is the National Data Governance Policy & Standards.
155.	What are the data exchange protocols required between agencies?	Integration with agencies shall occur primarily through the National Data Exchange Layer (NDEL) or other approved mechanisms supporting four modes: Mode 1 — Push (agencies push batch datasets via ETL pipelines through NDEL); Mode 2 — Scheduled Pull (NODE's ETL queries agency source systems on a defined schedule via NDEL); Mode 3 — Real-Time API Federation (NODE's API Gateway federates live queries through NDEL to the authoritative source in real time); and Mode 4 — Event-Driven Synchronization (source systems publish events through NDEL and NODE's ETL subscribes to these events). Manual or ad-hoc data exchange mechanisms shall not be considered compliant. For details supplier is advised to go through Section-VII Purchaser's Requirements in detail.
156.	Is there a required data catalog standard or metadata schema?	Yes. The authoritative standard is the National Data Governance Policy & Standards. The system shall additionally support internationally recognized frameworks including DCAT/DCAT-AP and Dublin Core (DCMI) for catalog-level metadata; DDI Codebook or DDI Lifecycle for statistical/microdata documentation; ISO 19115 and ISO 19139 for geospatial metadata; and machine-readable formats (RDF, JSON-LD, XML). A mandatory metadata standard must be enforced for all published datasets; no dataset shall be published unless mandatory metadata fields are complete. Standards adoption shall be treated as an evolutionary process, applied incrementally.
157.	What is the expected number of concurrent users, workspaces, and sessions?	Year 1: 100–200 concurrent web users (normal); 50–100 concurrent Sandbox workspaces. Year 2: 250–400 concurrent web users; 150–300 concurrent Sandbox workspaces. Year 3: 500–750 concurrent web users; 400–500 concurrent Sandbox workspaces. In all years, the system must support burst capacity up to 3× the normal concurrent web user load during peak or emergency demand.
158.	What are the required rate limits, quotas, throttling rules, and usage thresholds per user type?	A configurable tiered API access model is required with three tiers: Public tier (basic access with defined rate limits for unauthenticated users); Registered tier (higher limits for authenticated

		users); Institutional tier (elevated access for approved entities). The API Gateway must enforce rate limits per API, quotas per consumer, burst control and throttling, and configurable policy updates without requiring redeployment. Specific numeric thresholds are to be proposed by the Vendor in their Technical Proposal and shall form part of performance acceptance criteria.
159.	What CPU, RAM, storage, GPU, and network quotas must be supported per user/workspace?	The RFP requires Bidders to itemize infrastructure resources (VCPU, RAM, Structured Storage, and Object Storage) across Production, DR, and Test/Staging environments, sized for Year 3 (Target) workload parameters. For the Developer Sandbox, each active workspace requires 5–10 GB persistent block storage with access to shared object storage pools. The Test/Staging environment must be sized at a minimum of 50% of the Production environment resource allocation.
160.	What restrictions apply to internet access, package downloads, data export, and external API calls?	The Developer Sandbox must provide isolated, containerized workspaces. All Sandbox API access must route through the API Gateway, respect authentication and rate limits, and be logged for audit. Download endpoints must be decoupled from internal storage. Rate limiting mechanisms must prevent download abuse. Internal API endpoints must not be directly accessible from external networks and must be exposed externally only through the configured API Gateway layer. No direct database access is permitted from external networks.
161.	What is the retention policy for snapshots, inactive workspaces, logs, and user-generated artifacts?	Security logs shall be retained for a minimum of 12 months or as per the Data Governance Policy to support audit, compliance, and forensic investigation requirements. Dataset version history, provenance tracking, and transformation logs must be maintained and be tamper-resistant. Workspace snapshotting and sharing via URL is required. The RFP does not specify explicit retention periods for inactive workspaces; detailed retention policies are to be defined by the Vendor in the Deployment Architecture and Environment Design document as part of Deliverable 1.
162.	What is the expected number of datasets to be on boarded in the first year?	Year 1 (Baseline) target is 500–800 catalog datasets. The ETL infrastructure must support 20–30 ETL/ELT pipelines covering 10–15 data source agencies in Year 1. Deliverable 6 requires operationally usable datasets from a minimum of 25 organizations over 1–2 years post-go-live, delivered in 5 phases of 5 organizations each.
163.	Will agencies provide structured APIs, databases, or raw files for ingestion?	For detailed answer vendor is advised to go through Section-VII in detail. All methods are supported. The platform must support: API-based harvesting (automated harvest from API endpoints); manual upload and linkage (web-

		based file upload or remote URL linkage); direct database connections for complex data ingestion; SFTP and file share-based ingestion; harvesting from other National Open Data Portals; and event-driven and scheduled pull mechanisms through NDEL. Supported formats include CSV, TSV, JSON, XML, XLS/XLSX, GeoJSON, Shapefile, PDF, and RDF etc.
164.	Is the supplier responsible for data cleansing, transformation, and standardization?	Yes. The Supplier is responsible for the full ETL/ELT lifecycle, including: data extraction from heterogeneous source systems; validation, cleansing, normalization, enrichment, and transformation rules aligned with open-data standards; schema mapping, code harmonization, date standardization, data type conversion, null value handling, deduplication, and derived field computation; and injection of standardized data and metadata into the Open Data Portal's data store and catalog. All transformation logic must be documented, version-controlled, and subject to change-control processes.
165.	What tools or pipelines are expected for ETL / ELT processes?	The Supplier is expected to propose their own tools. The RFP requires modular, micro services-based ETL/ELT pipelines capable of handling heterogeneous input formats (JSON, XML, relational databases, Excel, structured/semi-structured sources, files of any other data types). Pipelines must support scheduled execution, incremental updates, full refresh operations, failure notification, and rollback mechanisms. The ETL layer must support automated data validation, cleansing, normalization, enrichment, metadata generation, and transformation logging. Intermediate caching or staging layers may be used for performance optimization.
166.	Is there a requirement for real-time data ingestion or streaming pipelines?	Yes. Mode 3 (Real-Time API Federation) requires that NODE's API Gateway federates live queries through NDEL to authoritative source systems in real time, without storing the data. Mode 4 (Event-Driven Sync) requires that source systems publish events through NDEL when data changes, and NODE's ETL layer subscribes to these events and updates the catalog immediately. The ETL platform must support scheduling and orchestration of real-time, batch, near-real-time, and event-driven data ingestion processes.
167.	What level of data quality validation is required before publishing?	Strict validation is required. No dataset shall be published unless: all mandatory metadata fields are complete (system-enforced); all configurable validation checks pass (e.g., file integrity, column structure, schema compliance); and review workflow approval from the Data Curation Team and DEEP has been granted. Automated validation feedback must be generated immediately upon submission. Automated ingestion shall not override governance controls.

		Stale datasets are automatically flagged at 80%, 100%, 150%, and 200% of the declared refresh window. Specific quality thresholds (e.g., for missing fields, invalid schemas, duplicates, geospatial errors) are to be proposed by the Vendor.
168.	Which specific ministries/agencies and priority datasets are expected in Phase 1, and what acceptance criteria will be applied per dataset?	The RFP does not specify named ministries or priority datasets for Phase 1. The Purchaser will identify and nominate the 25–30 participating organizations. Acceptance criteria per dataset require: mandatory metadata fields fully completed; validation checks passed; review workflow approval granted by the Data Curation Team and DEEP; operational data ingestion pipelines demonstrated; validated metadata records; and datasets published and accessible through the portal or APIs. The Supplier must propose detailed acceptance criteria in the Technical Proposal.
169.	Is there an existing dataset inventory or data-readiness assessment showing current formats, source systems, ownership, quality, and metadata completeness?	No existing inventory is provided by the Purchaser. The Supplier is required to conduct this assessment as part of Deliverable 1. The Business Requirements Validation Document (BRVD) must include an As-Is analysis covering existing data management and publication practices within selected government entities, current data formats and system architectures used for storing and managing datasets, and potential integration mechanisms for enabling data ingestion into the platform.
170.	Which metadata standard should be treated as authoritative for implementation: National Data Governance Policy schema, DCAT/DCMI, DDI, ISO 19115, or a purchaser-defined profile?	The National Data Governance Policy & Standards is the primary authoritative framework. Internationally recognized standards (DCAT/DCAT-AP, Dublin Core/DCMI, DDI Codebook/DDI Lifecycle, ISO 19115, ISO 19139, INSPIRE) shall be applied in a context-sensitive and progressive manner according to dataset type (catalog, statistical/microdata, geospatial). The Vendor must submit a Metadata Schema Design and Configuration Report for formal written approval from the designated authority before any schema configuration is finalized or deployed.
171.	Who will approve whether a dataset is publishable as open data, restricted, anonymized, aggregated, or excluded from publication?	The Data Curation Team (led by the Data Curation Lead) performs governance review and compliance verification. Final approval authority for dataset publication rests with the DEEP Project. Data-owning agencies retain full lifecycle control including dataset access policy management. The platform enforces a configurable publishing workflow with states: Draft, Pending Review, Approved, and Published. Non-compliant datasets may be flagged or withheld from national publication until compliance requirements are met.
172.	What data classification labels and handling rules must be captured in the catalog and enforced during	The platform must support data classification and handling rules as defined by the data-owning

	ingestion, publication, and API access?	agencies. The solution must prevent unauthorized access to restricted or sensitive datasets, support masking, anonymization, or aggregation where required, and ensure that metadata publication does not expose protected information. Data classification must be enforced at the API Gateway level through role-based and policy-based access control. The RFP requires support for classification covering open, restricted, anonymized, and aggregated dataset categories. Specific label taxonomy is to be aligned with the National Data Governance Policy & Standards.
173.	For each priority source system, which integration mode is expected: manual upload, API harvesting, database connection, SFTP/file transfer, NDEL scheduled pull, real-time federation, or event-driven sync?	All modes are expected to be supported. The four NDEL integration modes are: Mode 1 — Push via ETL pipelines (for statistical, periodic, or historical datasets); Mode 2 — Scheduled Pull via NDEL (for regularly refreshed datasets without agency intervention); Mode 3 — Real-Time API Federation through NDEL (for high-value, time-sensitive datasets requiring live query without data storage at NODE); Mode 4 — Event-Driven Sync through NDEL (for datasets where source systems publish change events). Additionally, manual upload, API-based harvesting, direct database connections, SFTP/file-based ingestion, and portal harvesting are all supported. The applicable mode per source system is to be determined during the As-Is analysis in Deliverable 1.
174.	Are NDEL integration specifications, test endpoints, credentials, and agency technical focal persons available for the implementation period?	The RFP does not confirm the availability of NDEL specifications, test endpoints, or credentials. The Supplier is expected to design and implement flexible integration architecture consistent with NDEL requirements. institutional coordination remains the responsibility of the Purchaser (PIU).
175.	What are the expected dataset refresh frequencies, and who is accountable for resolving stale datasets or failed ingestion jobs?	Publishing agencies must declare a mandatory refresh frequency as part of their metadata record. Acceptable values are: real-time, daily, weekly, monthly, quarterly, or annually. This commitment is system-enforced and becomes the contractual baseline for freshness monitoring. Automated escalation sequences are triggered at 80%, 100%, 150%, and 200% of the declared refresh window — progressing from automated reminders to dataset suppression and PIU governance dashboard escalation. The Supplier (Data Curation Team) is responsible for monitoring ingestion pipeline health and resolving technical failures; agency data focal points are responsible for content-level compliance.
176.	What data-quality thresholds should block publication versus create warnings, especially for missing fields, invalid schemas, duplicates, and geospatial errors?	The RFP establishes the principle that no dataset shall be published unless mandatory metadata fields are complete, validation checks pass, and review workflow approval is granted — these conditions effectively block publication. The

		platform must implement configurable validation rules (e.g., file integrity, column structure in tabular data) at the point of upload, and automated data profiling to identify quality issues, duplicate records, missing values, and inconsistent formats. Specific numeric thresholds distinguishing blocking violations from warnings are to be proposed by the Vendor in the Technical Proposal and shall form part of performance acceptance criteria. For details vendor is advised to go through Section-VII in detail.
177.	Who owns controlled vocabularies, taxonomies, sector classifications, organization hierarchies, license lists, and geospatial boundary references?	Controlled vocabularies are centrally managed within the platform and are editable only by authorized administrative roles (System Administrator level). All changes are logged with version history and must not retroactively alter published metadata without audit traceability. Unauthorized free-text override is not permitted where structured selection is required. The Vendor must submit a Metadata Schema Design and Configuration Report — including controlled vocabularies, validation rules, and mapping to recognized standards — for formal written approval from the designated authority before deployment.
178.	Is historical backfill or migration of legacy datasets required, and if yes, what volume, time range, and provenance/version history must be preserved?	The RFP does not specify a mandatory historical backfill requirement with defined volumes or time ranges. The As-Is analysis in Deliverable 1 (BRD) is to assess current data formats, source systems, and system architectures. The platform must support full version history and provenance tracking for all datasets, resources and migration. The detailed scope of any legacy data migration will be established during the Business Requirements Validation process in Deliverable 1, subject to Purchaser approval.
179.	What API limits, query patterns, and download policies should apply to raw datasets, metadata, large files, geospatial layers, and bulk access?	A tiered API access model is required: Public tier (basic rate limits), Registered tier (higher limits for authenticated users), and Institutional tier (elevated limits for approved entities). API response time targets are: metadata queries ≤ 500 milliseconds, dataset queries ≤ 1 second, download initiation within 3 seconds for files up to 500 MB. The API Gateway must enforce rate limits per API, quotas per consumer, burst control and throttling, and IP-based or token-based throttling policies. Large dataset partial download capability and compressed file options are required where applicable. Specific numeric limits per tier are to be proposed by the Vendor.
180.	Who resolves source data quality issues: supplier, agency, central data curation team, or purchaser?	Responsibility is shared. The Supplier's Data Curation Team is responsible for: dataset structural integrity review, anomaly and inconsistency identification, metadata validation, and compliance enforcement. Publishing agencies retain data ownership and are responsible for

		content-level accuracy and timely refresh within committed cycles. The DEEP Project (PIU) provides final approval authority. The Supplier is responsible for diagnosing and resolving technical onboarding issues (connectivity failures, schema mismatches, metadata validation errors, access-control misconfigurations). Policy coordination and institutional engagement remain the responsibility of the Purchaser.
181.	Will the platform require data classification and access controls for restricted datasets?	Yes. The platform must support data classification and handling rules as defined by data standards and governance policy and data-owning agencies. The API Gateway must enforce fine-grained, role-based and policy-based access control (RBAC/PBAC) at the dataset level. Restricted datasets must be protected from unauthorized access. The platform must support masking, anonymization, or aggregation where required, and ensure metadata publication does not expose protected information. Segregated network architecture separating public, application, data, and administrative zones is mandated. MFA and SSO are mandatory for all administrative, privileged, and publisher-level access.
182.	Is there a security operations monitoring requirement?	Yes. The platform must provide: comprehensive security logging for administrative actions, API access, and system events; tamper-resistant audit trails for compliance and forensic analysis; continuous monitoring and alerting for abnormal or suspicious activity; and integration capability with centralized Security Information and Event Management (SIEM) systems. Where required, the system must support 24/7 security monitoring and coordinated incident response capabilities. Security alerts for anomalous activity must be generated within 1 minute of occurrence. Logs must be retained for a minimum of 12 months.
183.	What is the expected process for vulnerability remediation and incident response?	Continuous vulnerability scanning and automated security monitoring are mandatory across infrastructure, APIs, and all application layers. Remediation timelines: Critical (CVSS ≥ 9.0) within 72 hours; High (CVSS 7.0–8.9) within 7 business days; Medium (CVSS 4.0–6.9) within 30 days. The platform must implement regular vulnerability scanning, timely security patches, secure configuration baselines, and documented secure operations procedures. Defined incident detection, reporting, and response procedures are required. The Supplier must submit an Operational Readiness and Knowledge Transfer Plan including incident management and escalation processes.
184.	What specific AI capabilities are expected from the platform (e.g., analytics, AI-ready datasets)?	The platform must include an AI/ML Analytical Model Library providing: centralized model repository (storage, cataloguing, versioning,

		governance); model lifecycle management (registration, approval, versioning, deprecation); standardized metadata schemas for all models (algorithm type, input/output schema, training dataset, accuracy measures, ethical considerations); and secure search/filtering/discovery. The Developer Sandbox must support MLOps (continuous experimentation, model versioning, validation, deployment). AI-assisted decision support, bias detection, explainability tools, and AI-based data enrichment (automatic classification, cleaning, augmentation) are also specified objectives. Predictive analytics, NLP, image recognition, and geospatial classification are cited as realistic use cases. Platform does not need to provide dedicated GPUs for model training or inference.
185.	Will the purchaser require AI/ML tools integrated within the platform?	Yes. The AI/ML Analytical Model Library is a core deliverable (Phase 3). The Developer Sandbox must include pre-configured AI libraries and MLOps capabilities. The AI/ML Repository integrates with both the API Gateway and the Developer Sandbox Environment, allowing models to be tested, improved, and reused by developers, researchers, and government analysts. The Library must be data-agnostic and technology-neutral, supporting multiple frameworks (TensorFlow, PyTorch, scikit-learn, etc.). All model-related functions must be exposed via secure, token-authenticated RESTful APIs conforming to the platform's API Gateway and IAM policies.
186.	Are there expectations for data sandboxes or innovation environments?	Yes. The Developer Sandbox is a core deliverable (Phase 2) providing: on-demand, containerized, and isolated developer workspaces; pre-defined workspace stacks pre-loaded with programming languages (Python, R, Java, Node.js etc.) and data science libraries; a universal, browser-based IDE with syntax highlighting, code completion, and debugging; Linux-based terminal and native Git integration; pre-configured access to the Open Data Portal's APIs and curated datasets; and integration with the AI/ML Model Library. MFA and SSO are mandatory. The sandbox is designed for developers, startups, researchers, and academic users.
187.	Will external developers or researchers have API access for experimentation?	Yes. External developers and researchers may access the platform through: the tiered API Gateway model (Public tier for basic access, Registered tier for authenticated access, Institutional tier for approved entities); the Developer Sandbox providing controlled access to datasets and APIs within isolated workspaces; and the AI/ML Repository for downloading, testing, and deploying models. All API access is secured through the centralized API Gateway enforcing

		authentication, rate limiting, and audit logging. Sandbox API access routes exclusively through the Gateway.
188.	How many baseline AI/ML models must be delivered, in which domains, and with what acceptance metrics?	The RFP does not specify a fixed minimum number of AI/ML models to be delivered. High-value, realistic use cases cited include: forecasting models on aggregated time-series (e.g., agricultural production forecasting); anomaly detection on financial aggregates (e.g., banking sector data); NLP models on public documents (regulatory gazettes, court judgments, procurement notices); geospatial classification models; and composite index construction models. The AI/ML Repository is described as a governed library of fine-tuned, pre-validated models. Specific model counts, domains, and acceptance metrics are to be proposed by the Vendor and agreed with the Purchaser.
189.	Are MLOps capabilities required in the sandbox only, repository only, or both?	MLOps capabilities (continuous experimentation, model versioning, validation, and deployment in a controlled and auditable environment) are specified within the Developer Sandbox. The AI/ML Analytical Model Library (repository) provides model lifecycle management including registration, approval, versioning, deprecation, and governance workflow — but is explicitly not a model training or inference platform. The repository stores and governs finalized, pre-validated model artifacts. Integration between the Sandbox and the Repository allows models developed in the Sandbox to be submitted and published to the Repository through the governance workflow.
190.	Who validates and certifies models before publication: MOITT, agencies, supplier, or a review committee?	The platform must implement a configurable review workflow enabling subject-matter experts to validate and certify models before public or institutional release. The Data Curation Lead approves dataset publication and oversees metadata compliance. The AI/ML Repository requires governance and auditability including audit logging for all model submissions, approvals, downloads, and updates. The RFP does not designate a specific named review committee; the Vendor must configure the governance workflow and propose the review process, which is subject to Purchaser (MOITT/DEEP) approval.
191.	What monitoring tools should be used to track SLA performance?	The RFP does not mandate specific monitoring tool products. The platform must provide: a comprehensive administrative dashboard displaying KPIs (total dataset count, new publications, top downloads, API usage statistics, user registration trends); API Gateway real-time usage dashboards and periodic API consumption reports; Publisher Scorecards publicly displaying each agency's metadata completeness rate,

		declared vs. actual update frequency compliance, and dataset quality index; and security monitoring dashboards and alerting mechanisms. Integration capability with centralized SIEM systems is required. Specific tooling is to be proposed by the Vendor.
192.	Are there penalties or service credits for SLA breaches?	The RFP states that persistent failure to meet defined resolution timelines or operational obligations under Deliverable 6 shall be treated as non-performance and shall attract applicable contractual remedies in accordance with the Agreement. The Implementation Schedule references Liquidated Damages Milestones per GCC Clause 28.2 for each deliverable. Unauthorized team substitution attracts a 1% penalty. Specific monetary penalty rates or service credit tables are not detailed in the RFP and are to be defined in the General Conditions of Contract (GCC) and Special Conditions of Contract (SCC).
193.	How will availability be measured for portal and APIs?	System availability shall be measured as a minimum of 99.9% uptime on the production environment, calculated monthly, excluding approved maintenance windows. All critical components (API Gateway, Portal, Identity Services) must operate in redundant active-active or active-passive configurations across at least two independent availability zones. For details vendor is advised to go through Section-VII Purchaser's Requirements in detail.
194.	What is the escalation process for P1 and P2 incidents?	For Critical Issues (P1 — complete system unavailability, authentication failures, critical security vulnerabilities with immediate risk): acknowledgement within 1 hour, resolution within 12 hours, immediate escalation to the Supplier's designated technical leadership. For High Severity Issues (P2 — major functional disruption including failure of core modules, API breakdowns, or serious security weaknesses): acknowledgement within 2 hours, resolution within 24 hours. All critical operational issues must be immediately escalated to the Supplier's designated technical leadership. The Supplier must submit weekly operational status and resolution reports to the DEEP designated team. Clearly defined communication and escalation channels must be established for issue reporting and coordination with the DEEP Project team.
195.	What is the expected project timeline and phase breakdown?	Total period for Deliverable 1 to Deliverable 5 (D1–D5) is 8–9 months from Effective Date. Deliverable 6 (Platform Operationalization — 25 organizations in 5 batches): 1–2 years commencing after acceptance of D5.
196.	Are there mandatory milestones tied to payments?	Yes. Each deliverable (D1 through D6-E) is tied to a mandatory payment milestone. Payments are made upon completion of delivery and successful

		acceptance by the Purchaser (DEEP). Each deliverable requires DEEP's written approval before proceeding to the next. Deliverable 6 has five sub-milestones (D6-A through D6-E), each covering 5 organizations, each with an associated payment milestone. No cost elements required to deliver the complete scope of all six deliverables may be excluded, deferred, or omitted.
197.	Will the supplier be responsible for change management across government agencies?	The Supplier is responsible for technical enablement activities only. This includes technical onboarding of agencies, ETL pipeline development and configuration, data curation, ingestion and transformation, technical training for agency technical focal persons, and operational support during onboarding. Institutional coordination, policy coordination, formal stakeholder governance, and change management at the organizational/policy level remain the responsibility of the Purchaser (PIU — Project Implementation Unit).
198.	What are the relative weights of technical vs financial evaluation?	The evaluation weightings are: 60% Technical and 40% Financial, as specified in both the Specific Procurement Notice and the Proposal Data Sheet (PDS).
199.	Are there minimum technical scores required before financial evaluation?	Yes. Passing marks for technical evaluation are set at a minimum of 50%. Only those Proposers who score at least 50% in the technical evaluation will be considered for further processing — specifically, the financial part opening and evaluation. Proposers scoring below 50% in the technical evaluation will be eliminated from further consideration.
200.	How will innovation or added value features be evaluated?	The NODE RFP does not provide any marks, scores, or credit for innovation or added value features beyond the defined scope and evaluation criteria. Section-III explicitly states: 'No other factors, methods or criteria shall be used.' Alternative Proposals are not permitted (ITP 13.1). Alternatives to the Time Schedule are not permitted (ITP 13.2). Alternative technical solutions are not permitted for any part of the Information System (ITP 13.4 — 'none'). Technical alternatives evaluation is also not applicable ('none'). Proposals are evaluated strictly on the rated criteria defined in the RFP. Any response that does not meet the specified technical requirements — whether through omission, deviation, or non-compliance — may result in the Proposal being declared non-responsive. Proposers are explicitly cautioned not to overload supporting materials with documents that do not directly address the Purchaser's requirements.
201.	What is the expected duration of operations and maintenance?	Deliverable 6 — Platform Operationalization, Stabilization, Data Ingestion, Curation, and Adoption Enablement — covers 1–2 years, commencing after acceptance of Deliverable 5

		(Production Go-Live). Additionally, one year of SLA (Support and Managed Services) is quoted separately with an option for extension at MOITT's discretion. If activated, the SLA Year 1 cost remains fixed and shall not be subject to escalation or revision. MOITT may also award a separate contract for SLA services.
202.	Will there be a managed service requirement after deployment?	Yes, Once D5 is approved, Deliverable 6, the Supplier must maintain a formal issue-tracking and resolution mechanism, submit weekly operational status and resolution reports to the DEEP designated team, and ensure meeting the full requirements detailed in Section-VII.
203.	What are the expectations for 24/7 support and monitoring?	Where required, the platform must support 24/7 security monitoring and coordinated incident response capabilities. During Deliverable 6, critical operational issues (P1) must be acknowledged within 1 hour and resolved within 12 hours, 24 hours a day. High severity issues (P2) must be acknowledged within 2 hours and resolved within 24 hours. Security alerts for anomalous activity must be generated within 1 minute of occurrence. The Supplier must maintain clearly defined communication and escalation channels for issue reporting and coordination with the DEEP Project team.
204.	Who will own and manage the platform after project completion?	The Ministry of Information Technology and Telecommunication (MOITT) owns the platform. Full custom-developed source code, configuration scripts, and documentation of all components — including the AI/ML Analytical Model Library — must be delivered to and owned by MOITT, allowing future customization and sustainability. The Operational Readiness and Knowledge Transfer Plan (Deliverable 1) must include structured knowledge transfer activities, operational documentation, system administration run books, and training programs for government technical teams to enable long-term government ownership and sustainability of the platform.

Phase - II

Serial No.	Clarification/Query requested by Bidder/ Proposer	Response by Purchaser
205.	Please clarify whether compliance requires customer-configurable cache backend technologies (e.g., in-memory versus distributed cache) and demonstrated cache utilization targets, or whether managed API response caching with configurable TTL policies is considered sufficient.	The RFP does not mandate specific cache backend technologies. Managed API response caching with configurable TTL policies is considered sufficient, provided the proposed solution meets the API response time targets specified in the RFP (metadata queries ≤ 500 ms; dataset queries ≤ 1 second). Bidders must document their caching architecture and demonstrate how it achieves required performance targets.
206.	Please clarify whether compliance requires documented support for specific compression algorithms and measurable payload-reduction targets, or whether standard HTTP response compression provided by a managed API Gateway service is considered sufficient.	The RFP does not mandate specific compression algorithms. Bidders must document the compression approach and its measurable impact on performance and security benchmarks.
207.	Please clarify whether compliance requires customer-configurable load-balancing strategies (e.g., round-robin, least-connections, weighted routing, health-check failover) or whether SAP-managed load balancing and high-availability mechanisms are considered acceptable.	SAP-managed load balancing and high-availability mechanisms are acceptable, provided the proposed solution meets the 99.9% uptime requirement, supports active-active or active-passive configurations across at least two independent availability zones, and includes documented health-check and failover capabilities. Bidders must demonstrate how the proposed approach satisfies the RFP's availability and redundancy requirements.
208.	How many Integration tenants (DEV/TEST/PRD, etc.) are you planning to have?	A minimum of three (3) logically and physically segregated environments are required: Development, Staging/Test, and Production. The Test/Staging environment must be sized at a minimum of 50% of Production resource allocation. Bidders may propose additional environments as required by their implementation methodology.
209.	How many business transactions or messages do you expect per month, and what's their Peak payload size?	Exact transaction volumes are not guaranteed at this stage and will evolve progressively. Based on the Year 3 sizing horizon in Section VII (clause 1.11). Bidders must propose a scalable architecture and document all sizing and payload assumptions. Reference: Section VII, clause 1.11 — Infrastructure Sizing and Performance Requirements.
210.	Do you foresee an increase in your monthly message volume over the next years?	Yes. NODE is designed to scale progressively over a 3-year horizon with increasing on boarded organizations, datasets, API consumers, and integration endpoints. Bidders must propose auto-scaling architectures to accommodate this growth trajectory.
211.	Beyond the standard eventing capabilities included with SAP Integration Suite, do you anticipate requiring SAP Integration Suite, Advanced Event Mesh? If yes, please provide the required number of environments/tenants and the estimated number of topics and queues, and any high	The RFP does not mandate any specific integration product or vendor technology, including SAP Integration Suite or SAP Advanced Event Mesh. The platform must support event-driven integration. Bidders are free to propose any standards-based, compliant event-driven

	availability or disaster recovery requirements to support broker sizing.	messaging architecture meeting the RFP's integration, scalability, HA, and DR requirements. All architectures must document topic/queue sizing assumptions and HA/DR configurations.
212.	Do you plan to connect any real-time or IoT-based systems (e.g., sensors, telemetry, or streaming data) that would require advanced event-driven integration?	IoT or sensor-based data streams are not in the primary NODE scope at this stage. However, the platform must support NDEL Mode 3 (Real-Time API Federation) and Mode 4 (Event-Driven Synchronization) for government datasets requiring near-real-time or real-time updates. The platform should be architected for future extensibility. Bidders are advised to design modular, standards-based integration layers capable of accommodating additional data stream types.
213.	Do you expect to use any AI-embedded capabilities within Integration Suite, such as automated mapping, anomaly detection, or predictive monitoring?	The RFP does not mandate AI-embedded capabilities within the integration layer specifically. However, the broader NODE platform includes AI/ML Analytical Model Library as a core deliverable.
214.	What are the specific data sources that the ETL tool will need to integrate with? What is the integration interface(s) that each of the sources support?	No fixed list of source systems or agency-by-agency interface details is prescribed at this stage, as participating organizations will have varying technical maturity levels. Supported integration mechanisms include: RESTful API harvesting, direct database connections, SFTP/file-based ingestion (CSV, XLS/XLSX, JSON, XML, GeoJSON, Shapefile, PDF, RDF etc.), manual upload/URL linkage, harvesting from external open-data portals, and NDEL-based push, pull, and event-driven mechanisms. The precise source system landscape will be determined during the As-Is analysis under Deliverable 1. Bidders must design a flexible, adaptable connector framework for mixed technical maturity environments.
215.	For each of the data sources in scope, what is the current and expected incremental daily data volume?	No fixed data volume baselines per source are prescribed at this stage. Bidders are expected to design scalable architectures and clearly document all sizing assumptions. For sizing details please refer to Section VII, clause 1.11.
216.	How many concurrent Sandbox environments are you expecting?	**Year 1**: 50–100 concurrent Sandbox workspaces. **Year 2**: 150–300 concurrent Sandbox workspaces. **Year 3**: 400–500 concurrent Sandbox workspaces. The system must support burst capacity up to 3× the normal concurrent load during peak demand. Each workspace requires 5–10 GB persistent block storage with access to shared object storage pools. For sizing details please refer to Section VII, clause 1.11.
217.	How many concurrent data scientist/SQL developers per Sandbox environment are you expecting?	The RFP defines concurrent workspace sizing at the environment level. The standard assumption is one active user per workspace. Target concurrent workspaces are: **Year 1**: 50–100; **Year 2**: 150–300; **Year 3**: 400–500. Bidders must propose workspace isolation, resource allocation, and multi-tenancy architecture supporting these

		targets with appropriate burst capacity provisions. For sizing details please refer to Section VII, clause 1.11.
218.	How many concurrent AI/ML models per Sandbox environment are you expecting?	The RFP does not specify a fixed number of concurrent AI/ML model executions per workspace. The Sandbox is designed for controlled experimentation and API consumption — not large-scale model training or inference. The AI/ML Analytical Model Library handles model registration, versioning, and governance separately. Bidders must propose resource allocation and isolation policies for model-related activities within the Sandbox and document all sizing assumptions.
219.	"Hosting & Infrastructure Costs – Pakistan Cloud First Policy Compliant" As we understand from this section that the Bidder is required to provide cloud hosting and related infrastructure services, please confirm. Could you also clarify whether bidders are free to propose any cloud or colocation facility that complies with the Pakistan Cloud First Policy, or if the Purchaser has a preferred or pre-approved list of providers? Furthermore, please confirm whether bidders are required to include complete hosting and infrastructure costs in the financial proposal, including cloud subscription, compute, storage, backup, bandwidth, security, disaster recovery, and any recurring operational costs for the contract duration.	Confirmed. The Bidder is required to provide all cloud hosting and related infrastructure services. No single preferred or pre-approved cloud provider has been designated; bidders are free to propose any cloud or colocation facility that complies with the Pakistan Cloud First Policy and is accredited with the Government of Pakistan. The financial proposal must include all hosting-related costs for the full contractual duration — including cloud subscriptions, compute, storage, backup, bandwidth, security, disaster recovery, and all recurring operational costs. No hosting cost element may be excluded, deferred, or omitted. Reference: Section III, Financial Evaluation (d); Section VII, clause 3.0.6.
220.	"The number of weeks, from the effective date specified in Article 3 of the Contract Agreement, to achieve Operational Acceptance must be no more than: 100 weeks, consistent with the Implementation Schedule." Could you please confirm whether any grace period or extension mechanism will be available in the event of delays arising from factors beyond the Supplier's reasonable control, such as dependencies on third party stakeholders, approvals, or data availability?	Force majeure and delay provisions are governed by Section-VIII GCC, Clause 38 and the contract framework. Where delays arise from factors genuinely beyond the Supplier's reasonable control such as documented third-party dependency failures, regulatory approval delays, or Purchaser-caused impediments, these may be addressed through the applicable contract governance, change management, and Section-VIII GCC delay mechanisms. Any such claims must be formally notified and documented in accordance with applicable Section-VIII GCC provisions. The Purchaser does not provide automatic grace periods; all extension requests are subject to formal approval by the Purchaser.
221.	Lists ISO/IEC 27001, NIST CSF, OWASP, and Pakistan Security Standards (PSS) as compliance requirements. Please clarify which of these standards are mandatory at contract award versus achievable during the project lifecycle?	All listed security standards (ISO/IEC 27001, NIST CSF, OWASP, and Pakistan Security Standards) are required to be complied with throughout the project lifecycle. The solution architecture must be designed from the outset to support compliance with all listed standards.

222.	Requires segmented network zones but does not specify the topology. Will the Purchaser provide a reference network architecture, or is the bidder expected to propose and define the full network segmentation design independently?	The Purchaser does not prescribe a specific network topology. Bidders are expected to independently propose and define a full network segmentation design meeting the RFP's requirements for segregated zones (public, application, data, and administrative zones etc.). The proposed architecture must comply with ISO/IEC 27001, PSS, and NIST CSF and be submitted as part of the Deployment Architecture and Environment Design document under Deliverable 1 for formal Purchaser approval.
223.	Mandates DDOS protection and IDS/IPS but does not specify capacity thresholds or attack volume baselines. Can the Purchaser provide expected traffic volumes, peak load estimates, or minimum mitigation capacity (GBPs) to be used for sizing purposes?	The Purchaser does not provide specific DDoS mitigation capacity thresholds or attack volume baselines. Bidders are expected to independently size DDoS protection and IDS/IPS capabilities based on the concurrent user loads, API transaction volumes, and traffic profiles defined in the RFP as per the Reference sizing: Section VII, clause 1.11. Bidders must document all DDoS and IDS/IPS sizing assumptions and proposed mitigation capacities in their Technical Proposal.
224.	Requires Web Application Firewall (WAF) deployment but does not specify the delivery model. Does the Purchaser require a cloud-managed WAF service, an on premises appliance, or will either be acceptable provided OWASP Top 10 coverage is demonstrated?	Either a cloud-managed WAF service or a software-based WAF solution is acceptable, provided OWASP Top 10 coverage is fully demonstrated and the solution integrates with the overall network segmentation and security architecture. On-premises hardware appliances are not required. The proposed WAF delivery model must be documented in the security architecture design submitted as part of the Technical Proposal.
225.	Requires IAM integration with national or organizational identity systems. Please confirm whether existing national identity provider APIs, Endpoints, or integration information will be made available to the bidder during implementation?	The platform must support enterprise-grade IAM with SSO, MFA, OAuth2, Open ID Connect, and RBAC with integration capability for approved national or organizational identity systems. API documentation, integration specifications, and connector details for NDEL and related systems will be shared prior to the applicable integration phase and associated deliverables. The exact identity onboarding flows for public citizens versus government officials will be finalized during detailed design and implementation phases based on applicable governance and security policies.
226.	RFP states SIEM integration capability is required. Does the Purchaser already operate a government SIEM platform that the NODE solution must feed into, or is the bidder required to propose and deploy a standalone SIEM as part of the solution scope?	The Purchaser does not confirm the current operation of a designated government SIEM platform that the NODE solution must feed into at this stage. The RFP requires SIEM integration capability — the solution must provide comprehensive security logging, tamper-resistant audit trails, and event feeds in formats compatible with standard SIEM platforms, with the capability to integrate with any government-designated SIEM when available.
227.	RFP requires periodic independent penetration testing. Will the Purchaser provide or mandate an	The Purchaser does not maintain a pre-approved list of penetration testing firms. The selection of

	approved list of pen testing firms, or may the bidder engage any certified third-party firm?	any independent third-party firm for penetration testing or security audit activities shall be subject to the prior written approval of the Purchaser. The Supplier may propose a certified firm; however, the final decision on the appointment of the penetration testing or security audit firm shall rest solely with the Purchaser.
228.	RTO ≤ 4 hours and RPO ≤ 15 minutes with secure offsite backup storage. Please confirm whether a government-owned DR facility or GovCloud secondary site will be designated by the Purchaser, or whether the bidder must independently arrange a compliant DR environment within Pakistan?	The Purchaser does not designate a government-owned DR facility or GovCloud secondary site. The Supplier is responsible for independently arranging a fully compliant DR environment meeting the RFP's requirements (RTO ≤ 4 hours, RPO ≤ 15 minutes, secure offsite replication) within Pakistan and in compliance with the Pakistan Cloud First Policy. All DR infrastructure and hosting costs must be included in the Supplier's financial proposal.
229.	Please clarify whether submission of OEM Official Product Documentation and Other Acceptable Reference is mandatory for all items in the compliance sheet, or if alternative supporting documents can also be provided as evidence of compliance.	For proprietary solutions, OEM official product documentation is the preferred and primary form of evidence. For open-source technologies where no traditional OEM exists, acceptable evidence may include official product/community documentation, official repositories and release notes, implementation guides, standards references, architecture documentation, publicly available case studies, and verifiable production implementations. Suppliers must provide sufficient evidence demonstrating product maturity, supportability, security, scalability, and suitability for enterprise/government deployment. The Purchaser reserves the right to request additional documentation during technical evaluation to verify compliance claims.
230.	"Itemized cost for each major module/component." Could you please clarify whether the itemized pricing for each major module/component should include all associated costs, such as software licenses, third-party integrations, security assessments/audits, training, documentation, cloud hosting, and other implementation-related charges, or if these should be quoted separately?	The itemized pricing for each major module/component should reflect the total cost attributable to that module, including all directly associated costs such as software licenses, third-party integrations, implementation services, and module-specific activities. Cross-cutting costs such as security assessments/audits, cloud hosting, training, and documentation should be quoted as clearly identifiable and traceable separate line items within the financial proposal to maintain transparency and auditability. No cost elements required to deliver the complete scope of all deliverables (D1–D6) may be excluded, deferred, or omitted from the financial proposal.
231.	"Infrastructure sized for Year-3 workload." Could you please clarify whether bidders are expected to propose: (i) A fixed-capacity infrastructure sized upfront to support the projected Year 3 workload, or (ii) An elastic auto-scaling architecture capable of dynamically adjusting resources based on actual demand and usage patterns?	For evaluation and financial proposal purposes, infrastructure must be sized to the Year 3 target workload as specified in Section VII (clause 1.11). The Technical Proposal must clearly document: baseline provisioned capacity, scaling triggers and mechanisms, architecture design for progressive scaling, and the methodology for transitioning from Year 1 to Year 3 targets.

	This clarification will help ensure alignment in infrastructure sizing, architecture design, and commercial assumptions.	
232.	"Inception Report within 4 weeks." Could you please confirm the expected timeline for the Purchaser's review and acceptance of submitted deliverables, including the maximum period for providing formal sign-off or feedback?	The Purchaser will endeavor to provide acceptance, approval, and formal sign-off in a timely manner. The tentative review period shall not exceed 2-4 weeks from receipt of a complete and compliant deliverable submission, provided all required documentation is in order and the deliverable meets the acceptance criteria defined in Section VII. Formal acceptance procedures and sign-off timelines are governed by the Section-VIII GCC and Section IX SCC provisions. Reference: Section VIII GCC; Section IX SCC.
233.	"VAPT by independent third party." Who bears the cost of initial and retesting VAPT? Will Purchaser pre-approve the auditor?	All costs associated with mandatory VAPT activities — including initial assessment, remediation validation, and all retesting cycles — must be included in the Supplier's financial proposal. The Purchaser does not bear the cost of VAPT.
234.	"Onboarding 25–30 organizations." Please confirm list of prioritized agencies and whether onboarding sequence can be proposed by bidder.	The Purchaser will identify and nominate the 25–30 participating organizations for Deliverable 6 (D6-A through D6-E, 5 organizations per batch). A definitive priority list of agencies has not been finalized at this stage and will be confirmed during implementation.
235.	"Milestones linked to acceptance and payments." Please confirm maximum time for purchaser sign-off after deliverable submission.	The Purchaser will endeavor to provide formal acceptance and sign-off in a timely manner. The tentative sign-off period shall not exceed 2-4 weeks and in some cases 4-6 weeks from the receipt of a complete and compliant deliverable submission, provided all required documentation is in order. Each deliverable (D1 through D6-E) requires formal written DEEP approval before proceeding to the next milestone and triggering the associated payment.
236.	Could you please clarify which specific sections of Section VII – Requirements of the Information System requires a detailed bidder response and a Compliance Sheet/ Item-by-Item Commentary?	Completion of the technical compliance matrix (Annexure-I / Annex Tech-I) is mandatory for all sections of Section VII - Requirements for the Information System. Failure to complete the compliance matrix may result in disqualification during technical evaluation. Bidders are required to provide a detailed item-by-item commentary and compliance response for all rated criteria, mandatory requirements, and technical specifications defined across all sub-sections of Section VII, including but not limited to: system architecture requirements, component specifications (Open Data Portal, ETL, API Gateway, AI/ML Repository, Developer Sandbox), security standards, performance and scalability requirements, integration specifications, data governance obligations, and operational/SLA requirements. OEM documentation or equivalent evidence must be provided where specified.
237.	Item 2 lists a total of 37 personnel. Could you	**Service Duration:** Per the Implementation

	advise the required service duration for these resources and whether they will be deployed on-site or off-site? Or is this to be decided by the Bidder?	Schedule (Section VII - Requirements for the Information System), the total period for Deliverables D1 through D5 is 8–9 months from the Effective Date. Operational Acceptance must be achieved no later than 30th June 2028. Deliverable 6 (D6-A through D6-E) commences after acceptance of D5 and spans 1–2 years thereafter. Regarding the Data Curation Team specifically (Items 2.18–2.23), Section VII - Requirements for the Information System states: "The Data Curation Team shall remain active throughout all implementation and operational phases, including post-Go-Live." Proposers should factor this continuity requirement into their costing across the relevant forms. **On-Site vs. Off-Site:** The RFP does not prescribe a specific on-site or off-site deployment requirement for these resources. Proposers are expected to propose their deployment model in the Preliminary Project Plan (PPP) as part of their Technical Proposal, subject to Purchaser approval. All costs associated with the proposed deployment model shall be borne by the Supplier.
238.	Could you help clarify the relationship between Clause 2 (Human Resources) and Clauses 1.7–1.11? It appears both relate to implementation costs. Items 1.1–1.6: Solution/Product components — correct? Items 1.7–1.11: Corresponding implementation services — correct? Are Items 1.7–1.11 for implementation through D1–D5 to go-live? If so, what is Section 2 (Human Resources) used for — is it for D6 (A–E)?	Based on the structure of Form 3.4 and the System Inventory Tables in Section VII- Requirements for the Information System, the following is clear from the RFP: • Items 1.1–1.6 represent the platform solution/software components (Open Data Portal, ETL/ELT, API Gateway, Developer Sandbox, AI/ML Repository, Metadata & Governance). • Items 1.7–1.11 represent the corresponding implementation activities and services (Infrastructure Setup, Security & Compliance, Solution Engineering & Deployment, PMO, Training & KT). • Section II – Proposal Data Sheet (PDS), human resources contain the professional personnel costs for the project team required to deliver both the solution components and the implementation services. • The System Inventory Table (Recurrent Cost Items) in Section VII - Requirements for the Information System classifies Deliverable 6 (D6-A to D6-E) as a Recurrent Cost Item under Subsystem 2, separately from Subsystem 1 (D1–D5). Accordingly, D6-related costs are to be reflected in the Recurrent Cost Sub-Table (Form 3.5), not in Form 3.4. • Proposers should structure their Financial Proposal such that the Human Resources under Section II- Proposal Data Sheet (PDS) (Form 3.4) cover the D1–D5 implementation phase, while the Recurrent Cost Sub-Table (Form 3.5) covers the post-go-live operational support (Deliverable 6 and SLA). The division of

		resources between implementation and post-go-live phases should be clearly articulated in the proposal, and proposers should ensure that the same resource is not double-counted across both forms unless the role explicitly spans both phases (e.g., Data Curation Team). Refer to **ITP 17 (Proposal Prices)** and the pricing instructions in the RFP for further guidance.
239.	What does Item 3 'Other Required Resources' refer to? Is it for Hosting & Infrastructure Costs such as Alibaba Cloud, AWS, Azure, etc.?	Section III (Evaluation and Qualification Criteria) of the RFP explicitly requires the Financial Proposal to include a clearly identifiable separate line item titled "Hosting & Infrastructure Costs – Pakistan Cloud First Policy Compliant," covering all NODE components across all required environments (Production, DR, Staging/Test, Development) for the full contractual duration — including Deliverables D1 through D6. Section VII - Requirements for the Information System (Clause 3.0.6) further states that hosting costs must be quoted as a binding line item, fully itemized, clearly aligned with the proposed technical architecture, and covering all cloud compute, storage, bandwidth, and related operational costs. Item 3 (Other Required Resources) in Form 3.4 is the appropriate line item for capturing these hosting and infrastructure costs alongside any other resources not covered under Items 1–2 or Item 4. Item 4 (Licensing) specifically refers to software licenses that — per the RFP — shall commence from the official Go-Live date, as formally certified by DEEP, and not from the date of contract signing or installation. Refer to **FAQ # 91** in the published Frequently Asked Questions document for additional clarity regarding cloud hosting and the Pakistan Cloud First Policy.
240.	The template for this table is blank. Could you advise how we should complete it?	The Recurrent Cost Sub-Table (Form 3.5) should be completed by the Proposer based on the Recurrent Cost Items specified in the **System Inventory Table (Recurrent Cost Items)** under **Section VII – Requirements for the Information System.** The Proposer shall structure the support as per their proposed methodology, provided all mandatory requirements are met.
241.	When does Y1 start from? From Production Go-Live & Acceptance or from Operational Acceptance?	Year 1 (Y1) of the Recurrent Cost / SLA Period commences upon the formal issuance of the **Operational Acceptance Certificate (OAC)** following the successful completion of Operational Acceptance Testing (OAT), as specified in **Section VII - Requirements for the Information System, Clause 4.5.4 (OAT Exit Criteria and Operational Acceptance)**. The OAC marks the transition from the implementation phase (Deliverable 5) to the post-go-live operational phase (Deliverable 6). For further

		clarity, please refer to **FAQ #12** in the published Frequently Asked Questions document for NODE.
242.	Is Year 1–3 covered under the warranty? Do Years 1–3 need to be quoted free of charge?	The SLA services (Support and Managed Services of the Complete Solution) are quoted separately as Recurrent Costs. The RFP requires Proposers to quote Year 1 SLA costs as a binding line item in the Financial Proposal. Years 2 and 3 are optional extensions exercisable by the Purchaser on the same terms and prices. The SLA is distinct from the Warranty, and its activation is at MoITT's discretion. Please refer to **Section III - Evaluation and Qualification Criteria, Clause 4 (Financial Evaluation – SLA Cost Lock-In and Duration)** and **FAQ #11–13, 145 and related FAQ** in the published Frequently Asked Questions document for further details.

Glossary

AI/ML	Artificial Intelligence / Machine Learning
API	Application Programming Interface
AWS	Amazon Web Services
BRD	Business Requirements Document
BRVD	Business Requirements Validation Document
CV	Curriculum Vitae
CKAN	Comprehensive Knowledge Archive Network
CPU	Central Processing Unit
CSF	Cybersecurity Framework
CSV	Comma-Separated Values
CVSS	Common Vulnerability Scoring System
DB	Database
DR	Disaster Recovery
DDOS	Distributed Denial of Service
DCAT	Data Catalog Vocabulary
D1–D6	Deliverable 1 through Deliverable 6
ELT	Extract, Load, Transform
ETL	Extract, Transform, Load
FTE	Full-Time Equivalent
GCC	General Conditions of Contract – Section VIII
GCP	Google Cloud Platform
GeoJSON	Geographic JavaScript Object Notation
GPU	Graphics Processing Unit
GovCloud	Government Cloud
HQ	Headquarters
ICT	Information and Communication Technology
IDS	Intrusion Detection System
IoT	Internet of Things
IPS	Intrusion Prevention System
IPF	Investment Project Financing
ISO	International Organization for Standardization
ITP	Instructions to Proposers
JV	Joint Venture
JSON	JavaScript Object Notation
KPI	Key Performance Indicators
LD	Liquidated Damages
LOI	Letter of Intent
MFA	Multi-Factor Authentication
MLOps	Machine Learning Operations
MOITT	Ministry of IT and Telecommunication
MVP	Minimum Viable Product
Multi-AZ	Multiple Availability Zones
NCERT	National Computer Emergency Response Team
NIST	National Institute of Standards and Technology
NDEL	National Data Exchange Layer
NITB	National Information Technology Board
NODE	National Open Data Ecosystem
OAC	Operational Acceptance Certificate
OAT	Operational Acceptance Testing
OEM	Original Equipment Manufacturer
OWASP	Open Web Application Security Project
PB	Petabyte

PDS	Proposal Data Sheet
PDF	Portable Document Format
PIU	Project Implementing Unit
PMO	Project Management Office
PPF	Proposal Pricing Forms
PPP	Preliminary Project Plan
PST	Pakistan Standard Time
PBAC	Policy-Based Access Control
RAM	Random Access Memory
RBAC	Role-Based Access Control
RFP	Request for Proposals
RPO	Recovery Point Objective
RTO	Recovery Time Objective
SAP	System, Application and Products
SCC	Special Conditions of Contract – Section IX
SFTP	Secure File Transfer Protocol
SIT	System Inventory Tables
SLA	Service Level Agreement
SPN	Specific Procurement Notice
SSO	Single Sign-On
SIEM	Security Information and Event Management
TB	Terabyte
TTL	Time To Live
USD	United States Dollar
VAPT	Vulnerability Assessment and Penetration Testing
VCPU	Virtual Central Processing Unit
WB	World Bank
WCAG	Web Content Accessibility Guidelines
XML	Extensible Markup Language
XLS/XLSX	Microsoft Excel Spreadsheet formats