Draft[1]

Terms of Reference (TOR) for the assignment

The Design, Development, and Implementation of the PKSF's Integrated Systems Platform titled "Decision Support System (DSS)" as complete turnkey solutions

1.0 Background of PKSF

Palli Karma-Sahayak Foundation (PKSF) has evolved into Bangladesh's apex development foundation, recognized for its multidimensional approach to inclusive and sustainable growth. Established by the Government of Bangladesh in 1990, PKSF's mandate extends far beyond traditional microfinance, integrating finance, enterprise, environment, and human development under a unified institutional framework. Over three decades, it has transformed into a holistic development institution, providing catalytic support for productive employment, resilience building, and inclusive institutional growth.

Guided by its vision of 'A prosperous, resilient, and equitable Bangladesh', PKSF empowers low-income families through appropriate financial, risk mitigation, and capacity-enhancement services. PKSF's development architecture has expanded remarkably, reflecting its strong commitment to diversification and outreach. Its program portfolio now encompasses inclusive finance, microenterprise promotion, sustainable agriculture, skills and employment generation, climate resilience, and extreme-poverty eradication. These interventions are implemented through more than 200 POs operating over 20,000 branches, reaching 2.07 crore households, approximately one-third of the nation's population. This institutional ecosystem continues to serve as a national platform for fostering inclusive growth, sustainable livelihoods, and resilience in a rapidly evolving socio-economic landscape.

This diversification also includes a forward-looking digital transformation and a shift towards enterprise-driven growth. Under the new strategic plan (2025–2030), PKSF aims to increase annual lending to BDT 25,000 crore, expand digital financial services to 1 crore members, and support 3 lakh new microenterprises through value-chain development. It is also establishing two new financing channels and mobilizing USD 2.8 billion from development partners, including USD 1 billion in climate finance. These milestones demonstrate PKSF's capacity to blend financial inclusion with environmental sustainability and social transformation.

By embracing innovative partnerships with banks, FinTech's, and global climate funds, PKSF is progressively shaping itself into a digitally empowered, knowledge-based apex institution capable of translating inclusive finance into inclusive growth while sustaining its deep rural outreach and multi-sectoral relevance.

1. This Terms of Reference (TOR) is issued as a draft and supporting document to the Request for Expression of Interest (REOI). The scope, phasing, prioritisation, and detailed technical requirements described herein are indicative. The final and refined TOR will be issued with the Request for Proposal (RFP) documents.

Recognising these needs, PKSF has prioritised the development of a **comprehensive Decision Support System (DSS)**. This DSS will not merely be an MIS; rather, it will be an enterprise-level intelligence platform that ties together data, processes, performance metrics, workflows, analytics, and decision-making logic across the entire organization.

The DSS is intended to serve:

- **Senior Management**, by providing consolidated dashboards, analytics, exceptions, and KPI monitoring
- **Programme Divisions**, by supporting programme planning, monitoring, reporting, and performance tracking
- **Finance and Administration**, by strengthening financial oversight, fund flow monitoring, utilisation analytics, and compliance
- **M&E and Field Teams**, by providing digital tools for monitoring visits, geo-tagged observations, and compliance tracking
- **Special Units**, including environment, climate, social protection, and thematic programme units
- **Institutional Governance**, including workflow automation, document routing, and executive reporting
- Legacy System Modernization, by systematically rebuilding and integrating 41 functional modules from existing legacy software into a unified, scalable, and interoperable DSS architecture, ensuring continuity of institutional knowledge while eliminating fragmentation, redundancy, and technical debt
- Partners and Borrowers Integration, by creating a unified digital ecosystem that seamlessly connects PKSF, Partner Organizations (POs), and beneficiaries/members through standardized data exchange, borrower-centric workflows, sector-wide analytics, NID-enabled visibility, and transparent reporting—strengthening coordination, accountability, and evidence-based supervision across the entire partner network.
- Digital Financing Enablement, by supporting end-to-end digital financial journeys including demand-driven loan origination, progressive borrower assessment, trusted borrower cash-credit facilities, automated disbursement and recovery tracking, and integration with banking and mobile financial services—improving access, speed, transparency, and responsible finance at scale

PKSF intends to engage a qualified consulting firm through a competitive selection process following the **QCBS method under PPA 2006 and PPR 2025**, using CPTU's Standard Request for Proposal (SRFP). This Terms of Reference (TOR) defines:

- The functional and technical expectations
- Scope of services
- System architecture requirements
- Data management needs
- Security and governance principles
- Deliverables and reporting responsibilities
- Evaluation-related requirements
- Institutional expectations for sustainability and maintenance

It serves as the foundational document for the procurement, development, and implementation of the DSS. This Draft TOR is provided for reference at the EOI stage to communicate PKSF's intended scope and complexity. The final, binding TOR shall be issued with the Request for Proposal (RFP) documents, and may refine scope, phasing, technical specifications, and delivery mechanisms based on procurement requirements.

2.0 Integrated Systems Platform as Decision Support System

PKSF's leadership recognizes that achieving its ambitious mission requires fundamental transformation of technological capabilities and operational processes. The digital transformation vision extends beyond automation to reimagine how the organization operates, makes decisions, serves stakeholders, and measures impact. At the heart of this vision is the commitment to becoming a fully digitalized, data-driven organization where evidence-based decision-making replaces intuition, real-time information enables rapid response, and transparent systems enhance accountability.

Strategic priorities driving this transformation include enhancing operational efficiency through paperless operations; enabling real-time, evidence-based decision-making, scaling program delivery and impact measurement capabilities, strengthening accountability and transparency, and supporting Partner Organizations with modern tools and insights. The Decision Support System represents the technological foundation enabling the realization of these priorities.

PKSF has an opportunity to enhance efficiency and decision-making by integrating its 41 (Forty one) existing legacy modules into a unified, digital platform. Transforming from manual Excel-based processes and existing legacy software modules to an interconnected system will significantly improve data accuracy, streamline operations, and strengthen real-time decision support. The DSS implementation covers following categories of functional areas:

(a) 41 legacy functional modules currently operating in fragmented systems and spreadsheets, which will be rebuilt and modernized;

(b) Additional new functional modules are required to support the internal day-to-day operations of various departments, units, and teams, along with digital financing, analytics, governance, and cross-functional automation; and

(c) cross-functional and mobile application components.

Collectively, these constitute a total of sixty (60) functional areas, as detailed in Section 8 of this TOR."

The PKSF Decision Support System (DSS) is a transformative digital initiative designed to modernize the foundation's operations, enhance decision-making capabilities, and strengthen its network of Partner Organizations (POs). The selected Software Development Firm(s) will deliver a complete turnkey solution of a comprehensive system that will automate 60 functional areas over a 30 months period (18 months development and implementation, and 12 months maintenance and technical support). The proposed system will automate, streamline, and interconnect all core, support, and partner-related operations of the organization. It aims to build an end-to-end digital ecosystem connecting internal departments, partner organizations (POs), and external stakeholders through robust information systems, GIS-based tools, and AI-driven analytics.

The PO Integration components focus on the complete lifecycle of loan operations from demand and application intake to sanction, disbursement, and automated agreement generation, ensuring transparency and traceability. Additional modules include offsite monitoring tools, automated meeting memos, PO and branch profiling, GIS-based member and resource mapping, dynamic member databases integrating loan and grant services, and systems for PO rating, borrower assessment, early warning, and development partner management. These will enable data-driven decision-making and performance monitoring of POs through advanced dashboards, sectoral reports, and comparative analysis tools that assess performance across regions, sectors, and institutions.

The Internal Systems will digitize and automate key administrative and managerial processes. These include audit and HR management, payroll, budgeting, fund management, procurement, contract management, and MIS functions. Additional systems such as board activity management, finance and accounts, fixed asset and inventory management, logistics, maintenance, pension and gratuity management, and employee loan management will ensure efficient internal control, accountability, and operational transparency. Specialized modules for training center management, communication and publication, digital archiving, library, law, and research and development will further enhance institutional capability and knowledge retention.

The Cross-Functional Modules will establish the technological backbone of the platform, integrating role-based access control (RBAC), workflow, and business rules management systems (BRMS), external user access, and a unified reporting and document management system. Other key features include notification and meeting management, employee dashboards, self-service portals for applications and requisitions, and mobile applications for field-level and managerial access. Advanced capabilities like a Knowledge Management System (KMS), AI/LLM integration for intelligent analysis and assistance, risk management, and performance excellence frameworks will promote innovation, governance, and continual improvement.

Collectively, these modules will create a unified digital platform enabling real-time data flow between the PKSF, partner organizations, and other relevant stakeholders.

The envisioned DSS will constitute a unified digital ecosystem. The DSS is conceptualised as a **comprehensive, multi-layered with minimum critical interfacing, modular, and interoperable platform** designed to support operational, tactical, and strategic decision-making across the organisation. The qualified firm will require to ensure that each division/department/unit/team must have:

- Distinct business processes
- Unique indicators and KPIs
- Separate reporting structures
- Different frequencies and granularity of data submission

The DSS shall integrate these diverse workflows through:

- Common master data repositories
- Merged workflows across divisions
- Unified analytics frameworks

2.1 Integrated Architecture Philosophy

The DSS will operate as an enterprise system built on modern architectural principles, ensuring:

- **Modular Extensibility:** Each functional area will be developed as a module that can operate independently but remains fully integrated.
- **Service-Oriented and API-Driven Interactions:** The platform should be capable of integrating with internal systems.
- **Interoperable Components:** Shared services such as authentication, notification, workflow, logging, and analytics are reused across modules.
- **Future-readiness:** The platform should adopt an architecture that supports new modules, analytics tools, and integration expansions without major redesign.

2.2 Technical Integration Requirements

The platform must support:

- **Service-oriented architecture (SOA)** enabling module-level autonomy
- **RESTful API gateways** for communication with external systems

- **Scalable database structures** supporting exponential growth of programme interventions
- **High availability and resilience** for continuous operation

2.3 Institutional Alignment

The DSS shall reflect PKSF's organisational processes and governance culture. It should:

- Align programme reporting and financial oversight with PKSF-approved standards
- Strengthen PO compliance, programme quality, and result tracking
- Enable faster decision-making with evidence-based insights

The system should incorporate PKSF's internal processes:

- File movement and approvals
- Monitoring and feedback cycles
- Programme implementation reporting
- Financial review and disbursement checks
- PO compliance verification
- Administrative approvals and standard operating procedures

Digitizing these workflows reduces turnaround time, enhances transparency, and ensures consistent adherence to PKSF's delegations of authority.

2.4 Key Characteristics

The DSS will:

1. Consolidate programme, financial, M&E, sustainability, and institutional data.
2. Provide dashboards tailored for roles (e.g., MD, DMDs, GMs, Programme Heads/ Team leaders).
3. Provide real-time visibility on fund disbursements, utilisation, and compliance.
4. Enable digital field monitoring and PO reporting through mobile apps.
5. Strengthen M&E through structured data capture, GIS features, and geo-tagging.
6. Facilitate advanced analytics, including forecasting, risk profiling, and trend analysis.
7. Support PKSF's long-term knowledge management and documentation efforts.

2.5 Functional Depth and Cross-Departmental Synergy

Each module of the DSS should not only perform individual functions but also share information with other modules to create institutional synergy. For example:

- Financial disbursement data should automatically inform programme dashboards.
- PO compliance data should influence M&E workflows.
- Field visit observations should feed into risk assessment and performance scoring.
- Sustainability metrics should contribute to thematic programme reporting.

This interconnectedness ensures seamless institutional workflows.

2.6 User-Centric System Design

The DSS must be developed using human-centric design principles suitable for:

- Senior executives requiring high-level summaries
- Technical programme staff requiring granular data
- Field officers using mobile apps
- POs submitting required reports
- IT and administrative units maintaining the system

User roles and access permissions must be clearly defined to maintain data security and workflow integrity.

2.7 Strategic Relevance for PKSF

The DSS is a core pillar of PKSF's internal digitalization roadmap. The DSS will provide PKSF with:

- enhanced institutional readiness for large-scale digital transformation;
- robust reporting capabilities supporting national and global frameworks;
- improved planning and budgeting accuracy through predictive analytics;
- evidence-backed justification for new programme design and expansion;
- enhanced accountability in fund management and compliance oversight.

It must:

- Reduce operational inefficiencies
- Ensure data integrity
- Enhance institutional memory
- Support reporting obligations to government, donors, and stakeholders

2.8 Long-Term Evolution and Scalability

The system must support:

- Growing numbers of POs
- Expansion of mobile usage
- Increased volume of field-level data
- New programme indicators
- Long-term archival of historical datasets
- Progressive enhancements without requiring system replacement

3.0 Features of Decision Support System (DSS)

The proposed **Decision Support System (DSS)** aims to serve as PKSF's central intelligence and management platform, integrating financial, operational, and developmental data to facilitate evidence-based decision-making and strategic planning. Aligned with PKSF's Strategic Plan and its core pillars, inclusive finance, enterprise development, human capacity, climate resilience, and digital transformation, the DSS will establish a comprehensive, data-driven ecosystem to monitor, analyze, and enhance institutional performance and impact.

i. **Integrated, Multi-Dimensional Data Architecture:** The DSS will consolidate finance, microenterprise, project, climate, and human development data into a unified, interoperable platform. This integration will enable real-time monitoring and analytics on outreach, portfolio performance, member well-being, and environmental impact, shifting PKSF from input-based reporting to outcome- and impact-based management.

ii. **Performance, Impact, and Resilience Analytics:** The system will incorporate tools for monitoring strategic KPIs across all program areas, with capabilities for scenario modeling, forecasting, and spatial data visualization. These features will strengthen policy formulation and adaptive management through evidence-backed insights into economic opportunity, institutional resilience, and developmental outcomes.

iii. **Beneficiary and Partner Organization (PO) Management:** A centralized repository for beneficiaries and partner organizations will enable comprehensive tracking of member profiles, services received, and prevention of multiple borrowing or over-indebtedness. GIS-based mapping and digital dashboards will visualize outreach by demographic, sector, and geography, supporting equitable and efficient service delivery. The system will also facilitate financial inclusion by enabling the delivery of financial services through mobile financial services (MFS) or digital banking platforms, allowing beneficiaries to access loans, savings, and payments digitally in a secure and transparent manner in the near future.

iv. **Resource Mobilization and Financial Integration:** To meet the Strategic Plan's financing goals, the DSS will feature dashboards for tracking loan portfolios, donor funding, and project expenditures, providing real-time visibility into financial flows and performance. Integrated analytics will support forecasting, fund allocation, and reporting to development partners and stakeholders.

v. **Knowledge, Risk, and Compliance Intelligence:** The platform will embed a dynamic knowledge management system linked to institutional research, risk monitoring, and compliance tracking. AI-driven analytics, automated alerts, and predictive reporting will

enable proactive governance, informed decision-making, and continuous learning across all operational levels.

vi. **Cross-Cutting Digital Transformation Framework:** The DSS will be built on a scalable, secure digital framework ensuring interoperability, data integrity, and workflow automation across departments, projects, and POs. Robust cybersecurity, user access control, and integration protocols will underpin PKSF's broader digital transformation agenda.

The Decision Support System (DSS) shall incorporate a comprehensive set of functional, analytical, operational, and governance features to fully support PKSF's institutional mandate. The system is expected to act as a central platform for data-driven decision-making, programme oversight, monitoring, evaluation, and organizational governance, serving users at head office, regional offices, and field level.

3.1 Integrated Modular Architecture

The DSS must be designed using a modular yet fully integrated architecture, allowing PKSF to manage complex and evolving programme structures without system disruption. The system must demonstrate:

- **Clear separation of functional modules** (such as monitoring, reporting, workflows, analytics, and administration) while ensuring seamless data exchange and operational integration across modules.
- **Shared configuration and master data management**, so that changes to organizational structures, indicators, or parameters are reflected consistently across the entire system.
- A **uniform navigation structure, user experience, and visual design language**, ensuring ease of use and reducing training requirements.
- **Parameterized and configurable workflows** that can be adapted as PKSF's programmes, policies, and operational needs evolve, without requiring major redevelopment.

3.2 Data Governance and Repository Management

The DSS shall establish a **strong data governance framework** to ensure data accuracy, consistency, traceability, and long-term usability.

The system will establish:

- A **centralized data warehouse or data mart** that serves as PKSF's single source of truth for all programme, financial, and operational data.
- **Data validation and verification rules** at the point of entry and during processing to minimize errors and inconsistencies.
- **Role-based access control**, ensuring users can only view, edit, or approve data relevant to their responsibilities.
- **Data lineage and audit trails**, enabling PKSF to trace data back to its source, understand transformations, and identify responsible users.
- **Version management** for dynamic data elements such as indicators, targets, reporting formats, and programme parameters.
- **Automated data archival policies** to securely store historical data while maintaining system performance.

3.3 Dashboards and Analytical Models

The DSS should transform raw data into **meaningful insights** that support management, strategic planning, and operational decision-making.

The system should support:

- **Institution-wide dashboards** providing a consolidated view of PKSF's overall performance.

- **Programme-level and Partner Organization (PO)-level dashboards** for detailed operational monitoring.
- **Customizable dashboards** allowing management to define views based on role, responsibility, and decision needs.
- **Clear KPI mapping** aligned with PKSF's Strategic Plan goals and programme frameworks.
- **Drill-down functionality**, enabling users to move from high-level KPIs to detailed records, transactions, or field-level data.
- **Trend analysis, variance analysis, and predictive analytics**, supporting performance tracking, risk identification, and forward-looking insights.

3.4 Workflow Automation

The DSS shall digitize and automate PKSF's internal workflows to improve efficiency, transparency, and accountability.

This includes digitization of:

- **Document movement and circulation** across departments and approval levels.
- **Approvals and authorizations**, aligned with PKSF's formal delegation of authority.
- **Automated notifications and reminders** to reduce delays and missed actions.
- **Escalation mechanisms and exception alerts** when timelines, thresholds, or rules are breached.

All workflows must accurately reflect PKSF's existing internal processes, approval hierarchies, and governance structures**.**

3.5 Mobile Applications

The DSS must include mobile applications to support field-based operations, monitoring activities and **digital financing.**

Mobile applications must:

- **Operate in offline mode**, with automatic synchronization once internet connectivity is available.
- **Capture geo-tagged field data**, ensuring authenticity and traceability of monitoring visits.
- **Support PO-level reporting** directly from the field.
- **Provide role-appropriate dashboards** for field officers and supervisors, optimized for mobile devices.

3.6 Integration and Interoperability

The DSS should be designed as an **interoperable platform** capable of integrating with existing and future systems.

The DSS should:

- Support API-based integration using industry-standard protocols.
- **Integrate with legacy systems** currently used by PKSF, where replacement is not immediate.
- **Allow future expansion** to connect with government platforms, donor reporting systems, or national information systems as required.

3.7 Security and Compliance

The DSS must meet **high standards of information security**, given the sensitivity of PKSF's data.

Security must include:

- **End-to-end encryption**, including HTTPS, AES, and database-level encryption where appropriate.
- **Multi-layer authentication mechanisms**, such as strong password policies and optional multi-factor authentication.

- **Strict session management**, including timeout controls and protection against session hijacking.
- **Comprehensive system logging and intrusion detection** to identify and respond to security threats.
- **Secure APIs**, protected by token-based authentication, rate limiting, and access controls.

3.8 Documentation and Training

The vendor must provide comprehensive documentation and training to ensure sustainable system use and maintenance.
This must include:

- **User manuals** tailored to different roles and user groups.
- **Administrator manuals** for system configuration, monitoring, and management.
- **Training materials** delivered in both **English and Bangla**.
- **Technical and code documentation** to enable PKSF's IT Division to understand, maintain, and enhance the system in the future.

3.9 Post-Deployment Reliability

The DSS must be supported as a **mission-critical institutional system** after deployment.
This includes:

- **SLA-based support services**, with defined response and resolution times.
- **Ongoing performance tuning** to maintain efficiency as data volumes grow.
- **Continuous system improvement** based on user feedback and evolving needs.
- **Bug resolution and patch management**, including security updates.
- **Operational monitoring** to ensure system availability, stability, and performance.

3.10 Enhanced User Experience and Accessibility

The DSS must be designed with **usability and inclusiveness** as core principles.
The DSS must ensure:

- **Intuitive and consistent navigation** across all modules.
- **Clear and uncluttered interface layouts** that support efficient task completion.
- **Full bilingual support** for English and Bangla.
- **Role-appropriate dashboards** aligned with user responsibilities.
- **Accessibility for users with limited technical skills**, minimizing reliance on IT support.
- **Mobile responsiveness** where applicable, ensuring usability across devices.

3.11 Robust Notification and Alert System

The DSS should actively support **proactive management and early risk detection**.
Alerts should include:

- **Programme performance exceptions**, such as underperformance or unusual trends.
- **Financial threshold warnings**, including budget overruns or anomalies.
- **Pending approvals and workflow delays**.
- **Compliance violations** against policies or reporting rules.
- **Data submission deadlines** and overdue reports.
- **Follow-up alerts** for field inspections and corrective actions.

These features will enable timely intervention rather than reactive management.

3.12 Document and Media Management

The DSS should include a structured **document and media management subsystem**.
The DSS should support:

- **Document uploads, tagging, categorization, and version control**.
- **Automatic linking of documents** to relevant workflows, programmes, or records.
- **Secure storage of photos and videos** collected during monitoring and field visits.
- **Metadata-based classification** for fast search and retrieval.

- **Archival systems** to support long-term document retention and compliance requirements.

3.13 GIS and Spatial Analytics

The DSS should leverage geographic information to enhance monitoring and analysis.
Mapping features may include:

- **Geographic locations of Partner Organizations (POs)**.
- **Programme and project site locations**.
- **Field visit tracking and location history**.
- **Geo-tagged data visualization and overlays**.
- **Spatial risk and coverage analysis** to support planning and impact assessment.

These capabilities will strengthen PKSF's monitoring framework and visualize programme reach and impact.

3.14 Audit Trail and Compliance Tracking

The DSS must provide a **comprehensive audit trail** to support governance, transparency, and compliance.
Every user action should be logged, including:

- **Data entry and updates**.
- **Approvals and authorizations**.
- **Data modifications and corrections**.
- **Document and media uploads**.
- **User access patterns and system usage**.
- **Authentication failures and security-related events**.

This ensures institutional accountability and audit readiness.

3.15 Knowledge Management Support

The DSS should also function as a **knowledge management platform** for PKSF.
The DSS will store and organize:

- **Training materials and capacity-building resources**.
- **Operational guidelines and policy documents**.
- **Research outputs and analytical studies**.
- **Case studies and best practices**.
- **Programme manuals and operational handbooks**.
- **Lessons learned and institutional memory**.

This will enable PKSF to systematically use accumulated knowledge for planning, training, evaluation, and programme improvement

3.16 Internal System Modernization and Enterprise Automation

The DSS shall modernise PKSF's internal digital landscape by consolidating, automating, and upgrading existing systems and manual processes into a unified enterprise platform. This includes the systematic **re-engineering and rebuilding of legacy applications and functional modules** to eliminate fragmentation, reduce operational risk, and improve efficiency across departments.
Key capabilities shall include:

- Rebuilding and integrating existing legacy systems and functional modules into the DSS architecture
- Automation of internal administrative, financial, and governance workflows Elimination of duplicate data entry and manual reconciliations
- Standardization of business rules, approval hierarchies, and delegations of authority
- Improved system performance, scalability, and maintainability
- Preservation of institutional knowledge embedded in legacy systems while reducing technical debt

This modernisation will ensure continuity, resilience, and long-term sustainability of PKSF's digital operations.

3.17 Partner and Borrower Integration Framework

The DSS shall establish a comprehensive digital integration framework connecting **PKSF, Partner Organizations (POs), and borrowers/beneficiaries** into a single, coordinated ecosystem. This framework will enable seamless data exchange, transparent workflows, and shared intelligence while respecting PO autonomy.

The system shall support:

- Standardized integration with PO MIS, AIS, and loan management systems
- Unified borrower and member profiles with NID-based visibility (where applicable)
- End-to-end digital interaction across loan origination, monitoring, reporting, and grievance handling
- Real-time and batch-based data synchronization for POs of varying technological maturity
- Sector-wide analytics and benchmarking across POs and borrower segments
- Strengthened accountability, traceability, and supervisory oversight

This integration will enhance collaboration, reduce information asymmetry, and enable evidence-based decision-making across the PKSF partner network.

3.18 Digital Financing Enablement

The DSS shall function as a digital financing backbone that supports **end-to-end, responsible, and demand-driven financial services** for borrowers while strengthening PKSF's oversight and risk management capabilities.

Digital financing features shall include:

- Borrower-initiated, demand-driven loan applications with structured data capture
- Progressive borrower assessment and credit-limit evolution across loan cycles
- Trusted borrower and revolving cash-credit (CC) facilities
- Automated affordability, KYC/AML, and multiple-borrowing checks
- Digital disbursement and repayment tracking with integration to banking and mobile financial services
- Real-time portfolio monitoring, utilization analytics, and risk alerts

These capabilities will improve access, speed, transparency, and inclusion in PKSF's financing operations while safeguarding borrowers and institutional funds.

4.0 Objectives of the Assignment

Deliver a Unified Decision Support System: Design, develop, and implement a modern, integrated DSS that consolidates financial, operational, developmental, and related data into a single interoperable platform.

Ensure System Modernization and Integration: Replace existing legacy systems with a unified platform covering all functional requirements, ensuring seamless inter-module integration and bilingual (Bengali-English) accessibility.

Implement Advanced Analytics Capabilities: Provide solutions/tools for KPI monitoring, scenario modeling, forecasting, and spatial visualization to support evidence-based decision-making, institutional resilience, and policy formulation.

Enable Comprehensive Beneficiary and Partner Management: Build a centralized repository to track beneficiaries and partner organizations to support efficient service delivery.

Integrate Financial and Resource Management: Develop dashboards and reporting tools for monitoring loan portfolios, funding from government and different development partners, program and project expenditures, etc. enabling real-time financial visibility and informed fund allocation.

Embed Knowledge, Risk, and Compliance Intelligence: Develop solutions to incorporate knowledge management, risk monitoring, and compliance tracking with AI-driven analytics, predictive reporting, and automated alerts for proactive governance.
Create an Open-Sourced AI Agent for PKSF's DSS: Develop an intelligent, open-sourced AI agent integrated within the DSS to enhance user interaction, automate routine analytical tasks, and support natural language queries. The AI agent will enable users to retrieve insights and visualize data through conversational interfaces in both Bengali and English. It will also assist in predictive analytics, anomaly detection, and policy recommendations, contributing to smarter, faster, and more inclusive decision-making across PKSF's operational ecosystem.
Develop a Scalable and Secure Integrated Systems Platform: Build a robust, interoperable, and secure Integrated Systems Platform with workflow automation, cybersecurity measures, and full compatibility with PKSF's digital transformation goals.
Implement Media Archive and Document Management: Establish a centralized, searchable media and document management module for storing, organizing, and retrieving digital assets such as reports, images, videos, publications, and official correspondence. The system will support metadata tagging, version control, and secure access permissions, ensuring efficient information governance, institutional memory preservation, and easy knowledge sharing across departments.

i. **Accessibility and User Adoption:** Deliver a user-friendly platform optimized for web and mobile (online/offline), provide comprehensive training, and ensure high user proficiency and engagement.

ii. **Data Migration and System Reliability:** Migrate legacy data using an appropriate Extract, Transform, and Load (ETL) process with high integrity, conduct thorough testing, and deploy a production-ready system with monitoring, support, and knowledge transfer to PKSF.

iii. **Provide Post-Deployment Support and Continuous Improvement:** Provide maintenance support, system monitoring, feedback integration, and change management to ensure sustainability, continuous learning, and operational excellence.

5.0 Scope of Work

The consulting firm shall undertake a comprehensive end-to-end assignment encompassing all activities required to design, develop, configure, deploy, operationalise, document, and support a fully functional Decision Support System (DSS) for PKSF. The Scope of Work (SoW) covers **all phases of the software development lifecycle (SDLC)** and must reflect international best practices while complying with PKSF's institutional standards and PPA/PPR requirements. The Scope of Work includes but is not limited to the detailed tasks below. These tasks reflect both the **expected outputs** and the **methodological standards** PKSF requires from the selected firm.

5.1 Project Initiation and Inception Phase

5.1.1 Mobilisation and Kick-Off

At the start of the assignment, the consulting firm must:

- Mobilise the team as proposed in the Technical Proposal.
- Participate in a formal kick-off meeting chaired by PKSF's MD, DMD's Office and Project Management Unit (PMU).
- Review the TOR, procurement requirements, reporting frameworks, and institutional expectations.
- Finalise project governance arrangements, including:
  - Roles of PKSF's Steering Committee
  - Roles of Technical Committee
  - Roles of DMD's Office (client representative)

- Roles of Project Management Unit (PMU)
- Communication and approval protocols

The firm must demonstrate readiness through:

- Introduction of all key experts
- Confirmation of resource availability
- Establishment of onsite and offsite working models
- Identification of key dependencies and constraints

5.1.2 Comprehensive Preliminary Assessment

The assessment should deepen an understanding of PKSF's entire operational landscape, including:

- Existing digital systems (legacy MIS, spreadsheets, reporting systems)
- Data sources across departments and POs
- Business processes and workflow dependencies
- Inter-divisional data flows and bottlenecks
- Reporting cycles and formats
- Internal approval systems
- Field-level monitoring practices
- POs' data reporting methods and digital readiness

The assessment must produce:

- A documented baseline of PKSF's current digital and data environment
- Clear identification of integration points
- A list of opportunities for digital improvement
- A detailed mapping of institutional workflows
- Basic process digitization & SOPs

5.1.3 Inception Report (High-Detail Requirements)

The Inception Report must include:

1. **Detailed methodology and rationale** for each project phase
2. **Stakeholder Engagement Framework** describing:
   - Which teams will be engaged?
   - Engagement methods
   - Meeting frequency
3. **Validated Requirements Baseline**, including:
   - Consolidated Functional Requirements Catalogue
   - Non-Functional Requirements (performance, security, scalability, availability)
   - Explicit assumptions and exclusions
   - Traceability between PKSF business objectives and proposed system functions
4. **Work Breakdown Structure (WBS)**
5. **Module-wise MVP Breakdown**, clearly specifying:
   - Each DSS module and sub-module
   - Proposed 4–10 MVPs per module
   - Functional scope of each MVP
   - Indicative sequencing of MVP delivery
   - Dependencies among MVPs

   The detailed definition, sequencing, and acceptance criteria of MVPs shall be finalized during the Inception Phase in consultation with PKSF and approved formally before development begins
6. **Detailed Gantt Chart** aligned with PKSF's calendar
7. **Identification and Analysis of Significant Project Milestones and the Critical Path**, including:
   - Definition of all major project milestones aligned with DSS modules, MVP groupings, approval points, and payment milestones

- Logical sequencing of activities using dependency relationships
- Identification of critical path activities that directly determine overall project duration
- Quantification of schedule float/slack for non-critical activities
- Identification of schedule risks associated with critical path activities and proposed mitigation measures

8. **Risk Register** with mitigation strategies
9. **Resource Deployment Plan** (onsite/offsite allocation)
10. **Communication and Reporting Plan**
11. **Quality Assurance Plan** covering:
    - Coding standards
    - Documentation standards
    - Testing frameworks
12. **Dependency Mapping**, including:
    - PKSF inputs
    - Data availability
    - System access requirements
13. **Preliminary System Architecture and Data Design**, including:
    - High-level system architecture diagram
    - Application layers and integration points
    - Preliminary data entities and relationships
    - Data sources, ownership, and flow assumptions
14. **Acceptance Condition**

    The Inception Report shall be considered acceptable only if it:
    - Fully addresses all required contents listed in Section 5.1.3
    - Demonstrates clear understanding of PKSF's business processes
    - Includes validated requirements, MVP breakdown, and preliminary architecture
    - Is approved in writing by PKSF
    - PKSF approval of the inception report is a mandatory milestone before Requirements Engineering begins.

5.2 Requirements Engineering and System Design

This phase is critical for correctly defining the DSS and preventing future misunderstandings. The consulting firm must follow industry-standard methodologies (e.g., IEEE, UML, BPMN).

5.2.1 Business Requirements Documentation (BRD)

The BRD must:

- Capture exhaustive business requirements for every division
- Document workflows for programme, finance, monitoring, compliance, climate/safeguards, and sustainability units
- Specify all data entry forms, reports, dashboards, and KPIs
- Identify user roles, permissions, and data validation rules
- Document manual processes that will be digitalised
- Highlight process reengineering needs
- Define the PO reporting framework
- Capture functional gaps in existing systems

The BRD must use:

- Use-case diagrams
- Swimlane workflow diagrams
- Business process models (BPMN 2.0)
- Activity diagrams
- Data dictionaries

Each requirement must be:

- Tracked
- Version-controlled
- Validated by PKSF divisions
- Stored in structured templates approved by PKSF
- Mapped to one or more Minimum Viable Products (MVPs) indicating when and how the requirement will be delivered

The BRD shall clearly indicate which requirements are addressed in which MVPs and in which project milestone

5.2.2 System Requirements Specification (SRS)

5.2.2.1 The SRS is a **binding technical contract** between PKSF and the firm. It must:

- Define each functional requirement at detailed (granular) level
- Specify all non-functional requirements:
  - Performance
  - Security
  - Scalability
  - Availability
  - Data integrity
  - Disaster recovery
  - Interoperability
- Provide screen mock-ups and wireframes
- Define database schema at conceptual and logical levels
- Describe API structures and data flow
- Define architecture of mobile apps
- Capture reporting templates and formulae
- Specify workflow rules and escalation logic
- Explicitly map each functional and non-functional requirement to one or more Minimum Viable Products (MVPs) and corresponding project milestones

Each requirement must be:

- Clearly traceable
- Testable
- Unambiguous
- Feasible within the project timeline

5.2.2.2 Critical Path & Priority Classification of Requirements

- Classify requirements by priority and schedule criticality, including identification of requirements that lie on the project's critical path
- Requirements identified as critical-path requirements shall receive priority in design, development, and testing.

5.2.2.3 Formal Traceability Matrix Requirement

- A Requirements Traceability Matrix (RTM) linking business requirements, SRS specifications, MVPs, test cases, and deliverables
- The RTM shall be maintained throughout the project lifecycle and updated with PKSF approval.

5.2.2.4 Security, Compliance & Audit Controls Explicitly

- Audit logging and traceability of user actions
- Role-based access control (RBAC) enforcement
- Compliance with PKSF data governance and confidentiality policies

The SRS shall clearly indicate in which MVP and milestone each requirement will be implemented. Upon formal approval, the SRS shall constitute the technical baseline for system

development. Any modification to the approved SRS shall be subject to PKSF's formal change management and approval process. No development may begin without PKSF's formal approval of the SRS.

5.2.3 Solution Architecture & System Design

The architecture must include:

a. Logical Architecture

- Layered architecture illustrating:
  - Presentation layer
  - Business logic layer
  - Data layer
  - Integration layer
  - Security layer

b. Physical Architecture

- Servers
- Application nodes
- Database nodes
- Network topology
- Firewalls
- Backup and failover systems

c. API and Integration Design

- API endpoints
- Authentication and authorisation method
- Rate-limiting protocols
- Error-handling mechanisms
- Data exchange formats
- Integration testing processes

d. Data Architecture

- Master data models
- Entity-relationship diagrams
- Metadata structure
- Data lifecycle governance
- Archival policies
- Historical data preservation

e. Workflow Design

- Routing rules
- Approval chains
- Rejection/return flow
- SLA-based escalation rules
- Notification triggers

f. Security Architecture

- Encryption strategies
- Access control model
- Audit log policies
- Vulnerability handling processes
- Secure API gateway design

g. Architecture Alignment with MVP Delivery, including:

- Mapping of architectural components to DSS modules and MVP groupings
- Identification of architectural components required for early MVPs versus later phases
- Validation that the architecture supports incremental MVP deployment without re-engineering

h. Capacity and Performance Design Assumptions, including:

- Expected number of users (PKSF, POs, field staff)
- Expected data volume and growth rates
- Performance benchmarks and response time assumptions
- Scalability approach for future programme expansion

i. Disaster Recovery and Business Continuity Architecture, including:

- Backup frequency and retention policy
- Recovery Point Objective (RPO)
- Recovery Time Objective (RTO)
- Failover procedures and testing approach

j. Architecture Standards and Compliance, including adherence to:

- Secure coding and design standards
- OWASP guidelines
- PKSF IT and data governance policies
- Interoperability and open standards (where applicable)

k. Architecture Acceptance and Change Control

The consulting firm must conduct architecture validation workshops with PKSF IT and Stakeholders. The solution architecture and system design shall be considered acceptable only if it:

- Fully addresses all architectural components specified in this section
- Demonstrates alignment with approved BRD, SRS, MVP structure, and milestones
- Is validated through architecture workshops and formally approved by PKSF

Upon approval, the architecture shall constitute the baseline for system development. Any change to the approved architecture shall be subject to PKSF's formal change management and approval process.

5.3 Application Development and Configuration

Once the SRS and architecture are approved, the consulting firm shall proceed to system development following modern software engineering standards. PKSF expects structured, well-managed, and transparent development processes to ensure quality, maintainability, and future scalability.

5.3.1 Modular System Development

The DSS must be developed as a **collection of functional modules**, each designed to support PKSF's programme, financial, monitoring, sustainability, and governance workflows. Each module shall:

- Be independently deployable (within defined architecture).
- Use standardized shared services (authentication, notifications, workflow engine).
- Maintain uniform design principles and UI/UX patterns.
- Be loosely coupled but tightly integrated at data and workflow levels.

The consulting firm must:

1. Develop modules using **clean code principles**, ensuring readability and maintainability.
2. Adopt **layered or microservices architecture** as approved in the system design.
3. Maintain complete version control via Git or equivalent.
4. Use CI/CD pipelines to ensure consistent build and deployment.
5. Document module-level interfaces for ease of future enhancement.

Each module must undergo internal testing by the consulting firm before being presented to PKSF for review.

5.3.2 Backend Development Standards

Backend development must adhere to:

- **Spring Boot / Java** (preferred and recommended)
- Modular business logic separation
- Clear APIs for frontend and external integrations
- Secure authentication and authorisation layers
- Stateless or semi-stateless design (as applicable)
- Logging and auditing frameworks integrated at service level

The backend must support:

- High-volume transactions
- Concurrency management
- Secure session handling
- Efficient data retrieval
- Validation and error-handling standards

5.3.3 Frontend Development Standards

Frontend development shall:

- Use **React** or a PKSF-approved equivalent framework
- Maintain consistent design language across all modules
- Provide adaptive layouts for varied screen sizes
- Ensure accessibility (clear text, colour contrast, navigation)
- Include strict input validation before submitting data to backend
- Support Bangla and English (optional initial phase; structure must allow future localisation)

User journeys must reflect PKSF's operational workflows.

5.3.4 API and Interoperability Development

PKSF requires the DSS to be interoperable with:

- Legacy internal systems
- External institutional systems (as applicable)
- Independent analytics tools
- PO-level structured data submission apps or systems

API Scope and System Mapping, including:

- Identification of each system to be integrated
- Purpose of each API integration
- Data objects exchanged
- Direction of data flow (push/pull/sync)
- Frequency of exchange (real-time, scheduled, on-demand
- APIs shall be developed, tested, and deployed incrementally and mapped to specific MVPs and project milestones.
- Each API shall indicate the MVP and milestone in which it becomes operational.

API development must include:

- RESTful architecture
- Standard request/response patterns
- Secure token-based authentication (OAuth2 / JWT)
- Error code definitions
- Rate limiting and throttling
- Access logging and monitoring
- Automated API documentation (Swagger or equivalent)
- API versioning strategy
- Backward compatibility rules
- Deprecation and sunset policy for older API versions

API integration testing must be conducted using approved testing tools to verify:

- Performance
- Reliability
- Security
- Error-handling

Data Integrity and Validation Controls, including:

- Input/output data validation rules
- Duplicate detection and handling
- Data reconciliation and exception reporting
- Handling of partial or failed transactions

API Acceptance and Documentation Requirements, including:

- Complete API documentation with endpoints, parameters, security, and examples
- API test results and logs
- Confirmation of compliance with performance and security benchmarks
- PKSF approval of APIs prior to production use

API Security and Monitoring Controls, including:

- Real-time monitoring of API usage
- Alerting for abnormal activity
- Incident response procedures for API failures or breaches
- Periodic security testing and review

No API shall be considered complete or eligible for milestone acceptance until formally approved by PKSF.

5.3.5 Workflow Automation Implementation

Workflows shall reflect PKSF's real institutional processes. Automation must include:

- Multi-step approval flows (configurable by PKSF)
- Task assignment and routing
- Commenting and justification notes
- Revision and resubmission cycles
- Alerts for delays and SLA breaches
- Automated email/SMS/app notifications
- Workflow-level audit logs

The consulting firm must create a **Workflow Configuration Guide** for PKSF IT Division to adjust workflows in the future without vendor dependency.

5.3.6 Mobile Applications for Field Operations, Institutional Automation, and Digital Financing

The consulting firm must develop **at least three mobile applications**, each designed for specific institutional needs:

a. Field Monitoring App

For PKSF M&E officers and programme staff. It must capture:

- Geo-tagged field observations
- Photos, videos, documents
- Beneficiary and PO-level data
- Structured compliance checklists
- Offline/online sync

b. PO Reporting App

For Partner Organisations to submit:

- Programme progress updates
- Financial utilisation data
- Thematic indicators
- Supporting media files

- Exception reports

c. Programme, PO, and Employee Performance Dashboard App

Designed for management and operational users, providing:

- Role-based dashboards for employees, supervisors, and management
- Programme and PO performance summaries
- Exception alerts and risk flags
- Employee-wise workload and task status visibility
- PO rankings and comparative analytics
- Field visit insights and monitoring summaries

d. PKSF Internal Operations & Employee Dashboard App

Designed for PKSF officers at different levels (field staff, programme officers, finance staff, divisional heads, and senior management). The app shall provide role-specific dashboards and workflow automation features, including:

- Personalised employee-wise dashboards based on role and responsibilities
- Task and workflow management (pending approvals, reviews, follow-ups)
- Real-time alerts and notifications related to programme, finance, and compliance matters
- Quick access to assigned programmes, POs, and field activities
- Digital approval, review, and feedback functions
- Secure access to institutional reports and dashboards
- Integration with DSS workflow automation and document management modules

e. Digital Financing & Financial Process Enablement (Mobile Support)

The mobile ecosystem shall support PKSF's digital financing and financial monitoring processes, including:

- Mobile access to fund disbursement status and utilisation summaries
- Digital submission and verification of financial documents
- Workflow-based approvals for financial processes
- Exception alerts for delayed or anomalous financial reporting
- Readiness for future integration with digital payment gateways or banking systems (subject to PKSF approval)

All apps must include:

All mobile applications shall be fully integrated with the DSS workflow automation engine, enabling:

- Mobile-based initiation, review, approval, and rejection of workflows
- Synchronisation of workflow status between mobile and web platforms
- Audit trails of all mobile-initiated actions
- Device-level security controls (session timeout, secure storage, encryption)
- Mobile audit logs aligned with DSS audit trails
- Compliance with PKSF security and data governance policies
- Support for controlled rollout, updates, and version management

5.4 Data Migration, Integration, and ETL Processes

PKSF's legacy data comes from different programme divisions, spreadsheets, standalone tools, and various MIS systems used historically. Ensuring accurate migration is fundamental for the DSS's credibility.

5.4.1 Data Assessment and Migration Planning

The consulting firm must:

- Identify all data sources (digital, semi-digital, paper-based where applicable).
- Conduct a Data Quality Assessment (DQA) for:
  - Completeness

    - Accuracy
    - Consistency
    - Duplication
    - Format variations
- Prepare a Data Mapping Matrix for:
    - Source fields
    - Target fields
    - Transformation logic
    - Validation rules

The firm must also define:

- Migration frequency (initial and incremental)
- Error-handling rules
- Data reconciliation methods
- Verification procedures involving PKSF divisions

A **Data Migration Strategy Document** must be approved before migration begins.

5.4.2 ETL Implementation

ETL pipelines must:

- Be automated
- Support incremental and full loads
- Apply transformation logic as approved in SRS
- Produce detailed logs (success/failure)
- Allow rollback in case of critical errors
- Include validation at:
    - Source level
    - Transformation stage
    - Destination level

The consulting firm must deliver:

- ETL scripts
- ETL workflow diagrams
- Error-handling documentation
- Transformation logic documentation
- Automated verification scripts

5.4.3 Integration with Legacy Systems

Where PKSF requires interoperability with existing or future systems, the consulting firm must ensure:

- Secure data exchange
- Scheduled or real-time synchronisation
- Validation before accepting external data
- Proper mapping of external identifiers
- API endpoints for bidirectional communication (if required)

Integration testing must include:

- Performance testing
- Stress testing
- Security testing
- Failover and retry logic validation

5.5 Testing, Quality Assurance, and Security Validation

Testing is critical to ensuring that PKSF receives a stable, secure, and scalable system.

5.5.1 Testing Activities

The consulting firm must implement a multi-layer testing process including:

a. Unit Testing

- Each function, method, API endpoint tested individually
- Minimum code coverage levels (PKSF may set thresholds)
- Automated tests encouraged

b. Integration Testing

- Validation of interactions between modules
- Verification of API communication
- Ensuring consistency in multi-step workflows

c. System Testing

- Full end-to-end testing of all modules
- Scenario-based testing reflecting PKSF workflows

d. Load and Performance Testing

- System tested under simulated high loads
- Performance bottleneck analysis
- Database optimisation recommendations

e. Regression Testing

- After each change or defect fix
- Automation recommended for efficiency

f. Mobile App Testing

- Cross-device compatibility
- Offline/online sync tests
- Network resilience tests

5.5.2 Quality Assurance Standards

The consulting firm must adopt:

- Standard coding conventions
- Peer review of code
- Repository-based version control
- Automated build pipelines
- Documentation of all test cases and results

PKSF may audit quality processes at any stage.

5.5.3 User Acceptance Testing

The firm must support PKSF in conducting UAT by:

- Preparing UAT scripts and checklists
- Guiding PKSF users during testing
- Documenting user feedback
- Fixing all identified issues
- Providing a UAT Completion Report

No deployment can occur before PKSF's formal acceptance.

5.5.4 Security Validation

Security verification must include:

- Vulnerability Assessment
- Penetration Testing (VAPT)
- OWASP Top 10 compliance audit
- API security validation
- Database security review
- Role-based access verification

The firm must fix all vulnerabilities before deployment. The consulting firm shall submit Vulnerability Assessment and Penetration Testing (VAPT) and Source Code Quality Testing (SCQT) reports conducted by Bangladesh Computer Council (BCC) or an equivalent

government-approved or internationally recognised independent organisation, and obtain PKSF's written acceptance prior to production deployment.

5.6 Deployment, Go-Live & Stabilisation

Deployment represents the transition from development/testing to real operational use by PKSF. This phase must be executed with meticulous planning, risk mitigation, and collaboration across PKSF units.

5.6.1 Deployment Planning

The consulting firm must prepare a comprehensive **Deployment Plan**, which includes:

a. Deployment Architecture

- Environment details (production, staging, DR site if applicable)
- Server/resource allocation
- Network readiness
- Database provisioning
- Load balancing configuration

b. Deployment Strategy

- Phased or big-bang deployment (as approved by PKSF)
- Migration sequence from staging to production
- Checklist for go-live readiness
- Back-out/rollback plan in case of system failure
- Communication plan for informing PKSF users

c. Pre-deployment Validation

- Validation of production environment
- Review of system logs and errors
- Performance benchmarks
- Validation of backups and restoration procedures

The Deployment Plan must be approved by PKSF prior to implementation.

5.6.2 Go-Live Execution

During go-live, the consulting firm must:

- Deploy the final codebase to the production environment.
- Configure production database with migrated data.
- Conduct controlled smoke testing to confirm basic functionality.
- Assist PKSF in verifying functional and performance readiness.
- Ensure all security layers are operational:
  a. API gateway
  b. RBAC permissions
  c. SSL certificates
  d. Database access controls
- Provide on-site/remote standby support to resolve issues immediately.

All activities must be logged in a **Go-Live Execution Report**, submitted within 5 working days after go-live.

5.6.3 Stabilisation Period

After go-live, the consulting firm must support PKSF through a **stabilisation window** (duration to be defined in RFP), during which:

- All major/minor defects discovered in live use must be resolved.
- Performance tuning must be conducted for slow processes.
- Data inconsistencies arising from migration must be corrected.
- Users must be supported in understanding new workflows.
- System logs must be monitored continuously.

A **Stabilisation Completion Report** must certify that:

- No critical defects remain;
- All modules are functioning reliably;
- User adoption issues have been addressed;
- Performance benchmarks are met.

Deployment is only considered complete once PKSF formally accepts this report.

5.7 Training, Documentation & Knowledge Transfer

Capacity development is a core requirement for PKSF's institutional sustainability. The consulting firm must design and execute a structured training and documentation programme suitable for multiple user groups.

5.7.1 Training Requirements

Training must be delivered to multiple categories:

a. Management Users

- Training on dashboards, analytics, KPIs
- Understanding exceptions and alerts
- Using summary reports for strategic decision-making

b. Programme & Thematic Staff

- Module-specific training
- Data entry, validation, and reporting
- Reviewing dashboards for programme interventions

c. Monitoring Field Staff

- Usage of mobile apps
- Offline data capture procedures
- Geo-tagging and evidence collection
- Syncing procedures

d. POs (Partner Organisations)

- Using mobile apps and web interfaces for reporting
- Data validation and structured reporting
- Compliance reporting features

e. IT & System Administration Personnel

- Server, database, and application configurations
- User and role management
- System log monitoring
- Backup and restoration
- Workflow configuration updates
- API key and security token management

Training must be delivered through:

- Physical workshops
- Online sessions
- Video tutorials (if feasible)
- Hands-on sessions
- Sandbox environment practice

A **Training Completion Report** must document attendance, training content, feedback, and certification of users.

5.7.2 Documentation Requirements

The consulting firm must produce comprehensive documentation:

a. System Documentation

- Architecture document
- Design document
- Configuration documents
- Deployment document

- Database schema documentation
- API documentation with endpoint details

b. User Documentation

- Step-by-step user manuals
- Workflow diagrams
- Screenshots of all functionality
- Dashboard usage guides
- Reporting guidelines

c. Administrative Documentation

- System configuration manuals
- Security configuration manuals
- Backup and restoration procedures
- Workflow configuration instructions

d. Developer Documentation

- Source code documentation
- Code structure and module dependencies
- API integration guidelines
- Reusable component libraries

All documentation must be:

- Clear, structured, and indexed
- Prepared in professional English
- Provided in soft copy (editable) and PDF formats

5.7.3 Knowledge Transfer

Knowledge transfer is essential to ensure PKSF's long-term ownership of the DSS. The consulting firm must:

- Conduct dedicated knowledge transfer sessions for PKSF IT Division
- Hand over all source code (uncompiled and compiled)
- Provide DevOps pipeline scripts
- Share all test cases and reports
- Provide database credentials and access policies
- Deliver the complete repository of:
  - Architecture artifacts
  - ETL scripts
  - Configurations
  - Supporting libraries

PKSF must be able to maintain, extend, and manage the DSS independently after the support period ends.

5.8 Post-Deployment Support and Maintenance

The consulting firm must provide SLA-based support for at least one year after final acceptance. PKSF expects a high level of responsiveness and efficiency in this post-deployment period.

5.8.1 Warranty and Support Services

Warranty services include:

- Correction of all defects
- Performance tuning support
- Application security patching
- Database performance monitoring
- UI/UX usability enhancements (minor adjustments)
- Assistance with user issues
- Support for workflow adjustments

The firm must maintain a **helpdesk system** (email, phone, ticketing) with:

- Ticket categories (critical, major, minor)
- Defined response and resolution times
- Escalation pathways

5.8.2 Service Level Agreement (SLA) Requirements

SLA expectations may include:

- **System uptime target:** e.g., 99%
- **Response time for tickets:**
  - Critical issues: within 4 hours
  - Major issues: within 1 business day
  - Minor issues: within 3 business days
- **Resolution time targets:**
  - Critical issues: 24 hours
  - Major issues: 3–5 days
  - Minor issues: 7–10 days

The consulting firm must submit **Monthly SLA Performance Reports** to PKSF.

5.8.3 Continuous Improvement Services

The consulting firm shall:

- Recommend performance enhancements
- Identify risks in workflows or data structures
- Suggest improvements based on user feedback
- Provide patches and updates
- Conduct quarterly system health checks
- Support new version roll-outs (if applicable)

5.9 Project Governance & Reporting

PKSF maintains strict governance requirements for system development assignments. The consulting firm must comply with these processes to ensure transparency, accountability, and quality assurance.

5.9.1 Governance Structure

The consulting firm shall work under three layers of PKSF oversight:

a. Steering Committee

Provides strategic oversight and approves:

- Major deliverables
- Significant changes to scope
- Strategic decisions on business requirement and technology

Comprised of senior PKSF management.

b. Technical Committee

Reviews:

- BRD, SRS, Architecture
- Data migration strategy
- Security and design specifications
- Module-level functionalities

Comprised of IT, programme, monitoring, and finance representatives.

c. DMD's Office and PMU (Client Representative)

Responsible for:

- Day-to-day coordination
- Review of progress reports
- Approvals of interim deliverables
- Ensuring cross-divisional alignment

The consulting firm must coordinate closely with the DMD's Office.

5.9.2 Reporting Requirements

Weekly Progress Reports

Must include:

- Work completed
- Work planned
- Risks and issues
- Pending PKSF inputs
- Action points

Fortnightly Progress Reports

Must include:

- Detailed deliverable status
- Gantt chart updates
- Resource utilisation
- Defect logs
- Change requests
- PKSF decision requirements

Issue Register

Must track:

- Issue ID
- Description
- Severity
- Assigned owner
- Expected resolution date
- Status

Risk Register

Must document:

- Identified risks
- Likelihood and impact
- Mitigation strategies
- Status updates

Regular review meetings will be held between PKSF and the consulting firm.

5.10 Further breakdown of the scope is as follows

Further breakdown of the scope includes, but is not limited to (for details please see the TOR and other attached documents):

i. Partner integration (APIs, authentication, data exchange with 200+ POs)
ii. Workflow- and Document-Driven Office Automation (configurable workflows, approvals, task management, e-document repository, versioning, audit trail)
iii. AI-driven Data Analytics and Reporting Engine (data ingestion, ETL pipelines, dashboards, predictive analytics, anomaly detection)
iv. Secure Microservices-based Platform using Java Spring Boot, Spring Cloud, PostgreSQL, and Python (for analytics modules)
v. Containerization and Deployment using Docker/Kubernetes, ensuring scalability and fault tolerance
vi. Implementation of Role-Based Access Control, Encryption, and Authentication (OAuth2/OpenID Connect)
vii. Integration with PKSF's existing applications, databases, and third-party systems
viii. Data migration, integration, and interoperability with existing systems
ix. Comprehensive testing, security hardening, and performance tuning
x. Training, documentation, and knowledge transfer for PKSF staff and POs

xi. Initial 12 (twelve) months of post-deployment support and SLA-backed maintenance (extendable)
xii. The total duration of the project will be 30 (thirty) months (18 months development and 12 months maintenance and technical support) including requirement analysis, system design, iterative development, deployment, and post-deployment maintenance. The firm will work closely with PKSF's IT Division and designated departmental teams.

6. **Deliverables**

The consulting firm must produce a comprehensive set of deliverables across the lifecycle of the project. Every deliverable must be:

- Submitted formally
- Reviewed by PKSF
- Revised based on PKSF feedback
- Accepted through written confirmation
- Stored in PKSF's documentation repository

No progress to next milestone is allowed until PKSF approves the preceding deliverables.

6.1 Inception Phase Deliverables

6.1.1. Inception Report

A detailed, structured document summarising the firm's understanding of:

- Objectives
- Scope
- Institutional context
- Methodology
- Work plan
- Risk assessment
- Stakeholder engagement plan
- Initial findings from preliminary assessment
- Updated timeline and resource plan

The Inception Report must reflect PKSF's institutional requirements and must be **actionable**, not generalised.

- Validated high-level business and technical requirements baseline
- Module-wise MVP identification and indicative sequencing
- Preliminary solution architecture overview
- Identification of significant project milestones and critical path
- Initial dependency mapping including PKSF inputs and external system readiness
- Acceptance criteria for subsequent BRD, SRS, and architecture phases

6.1.2. Stakeholder Mapping & Engagement Plan

A clear plan identifying:

- PKSF divisions to be engaged
- PO-level stakeholders
- Engagement formats
- Frequency of interactions
- Expected outputs from consultations
- Mapping of stakeholders to specific DSS modules and MVPs
- Roles of stakeholders in validation and approval of deliverables
- Schedule of consultations aligned with BRD, SRS, and MVP reviews
- Mechanism for documenting stakeholder feedback and PKSF decisions

6.1.3. Preliminary Requirements Traceability Matrix (RTM)

A high-level RTM mapping business objective to initial requirements, DSS modules, and proposed MVPs.

6.1.4. Initial Architecture & Integration Concept Note

A concise document outlining proposed system architecture, integration approach, data flow assumptions, and technology stack rationale.

6.1.5. MVP Delivery & Milestone Mapping Matrix

A matrix mapping identified MVPs to project milestones, indicative timelines, and validation points.

6.1.6. Inception Phase Completion & Acceptance Report

A formal report confirming completion of inception activities, summarising key decisions, agreed assumptions, approved timelines, and risks.

6.2 Requirements Engineering & Design Deliverables

All deliverables under this section shall be internally consistent, mutually traceable, and aligned with the approved Inception Report, MVP structure, and project milestones. No development or configuration activity shall commence until PKSF formally approves all deliverables under this section.

6.2.1. Business Requirements Document (BRD)

A highly detailed document containing:

- End-to-end process flows
- Business rules
- Use case catalogue
- System boundaries
- Reporting and analytics needs
- User role model
- PO reporting requirements
- Data dictionaries
- Requirement prioritisation and criticality classification (Must-Have, Should-Have, Optional)
- Mapping of each business requirement to one or more MVPs
- Identification of requirements that lie on the project's critical path
- Explicit documentation of assumptions, exclusions, and constraints

Every requirement must be mapped to future SRS sections.

6.2.2. System Requirements Specification (SRS)

A binding specification including:

- Functional requirements
- Non-functional requirements
- Security and compliance requirements
- Database schema
- Screen mock-ups
- Workflow logic
- Interface specifications
- Validation rules
- Requirement acceptance criteria and testability conditions
- Mapping of each requirement to BRD references, MVPs, and milestones
- Requirements Traceability Matrix (RTM) covering BRD–SRS–MVP–Test linkage
- Identification of performance benchmarks and capacity assumption

6.2.3. Solution Architecture Document

Including:

- High-level and detailed system architecture
- API architecture
- Data architecture

- Technology stack justification
- Security architecture diagrams
- Deployment blueprint
- Disaster recovery architecture

PKSF must validate and approve the architecture before development.

6.3 Development Deliverables

6.3.1. UI/UX Prototypes

Clickable prototypes illustrating:

- System navigation
- Form layouts
- Dashboards
- Workflow screens
- Mobile app layouts

6.3.2. Module-wise Developed Systems

Each module must be delivered:

- Fully developed
- Tested internally
- Deployed to staging environment
- Accompanied by module documentation

6.3.3. API Documentation

Including:

- Endpoint definitions
- Sample requests and responses
- Authentication guidelines
- Error codes
- Version control

6.4 Data Migration Deliverables

6.4.1. Data Migration Plan

A detailed document on:

- Data mapping
- Data quality analysis
- Transformation logic
- Migration strategy (bulk/incremental)
- Rollback plans

6.4.2. Migration Execution & Validation Reports

Reports detailing:

- Data migrated
- Failures and resolutions
- Reconciliation logs
- Verified data integrity checks

6.5 Testing & QA Deliverables

6.5.1Test Strategy & Test Cases

Describing:

- Types of tests performed
- Test coverage
- Tools used

- Pass/fail criteria

6.5.2. Testing Reports

Including:

- Results
- Defect lists
- Fix validation
- Performance test logs

6.5.3. Security Assessment Reports

Covering:

- Vulnerability assessment
- Penetration testing
- OWASP compliance
- Security patch recommendations

6.6 Deployment Deliverables

6.6.1. Deployment Plan

Detailed, actionable plan outlining:

- Deployment steps
- Pre-deployment checks
- Go-live process
- Resource deployment
- Rollback instructions

6.6.2. Go-Live Package

Including:

- Deployed code
- Configuration settings
- Database scripts
- Final validated data

6.6.3. Stabilisation Report

Summarising:

- Post-deployment issues
- Fixes applied
- Performance tuning steps
- System stability confirmation

6.7 Training & Documentation Deliverables

6.7.1. Training Plan

Covering:

- Training groups
- Curriculum
- Training calendar
- Delivery methods

6.7.2. User Manuals

Role-specific manuals for:

- Programme staff
- PO users
- Field officers
- Management users

6.7.3. Technical Documentation

Comprehensive documentation for:

- IT Division
- Developers
- Administrators

6.7.4. Admin/Configuration Manuals

Including:

- Role management
- Workflow configuration
- Data management guidelines
- Report configuration rules

6.8 Support Deliverables

6.8.1. Warranty Support Plan

Defining warranty scope, SLA, ticket categories, and escalation mechanism.

6.8.2. Monthly Support Reports

Reports covering:

- Issues raised
- Resolutions
- SLA compliance
- Performance observations

6.8.3. Final Handover & Completion Report

Summarising:

- All deliverables
- Code repository
- Deployment artefacts
- Training outcomes
- Certification of project completion

7.0 Technology platform and Tools

i. **Technology Stack:**

SL	Component	Details
1	**Database**	PostgreSQL
2	**Front-end**	React
3	**Back-end**	JAVA
4	**Mobile App**	Flutter-based Mobile Apps
5	**Architecture**	Microservice

ii. **Tools:** Describe the comprehensive suite of tools and technologies you employ throughout the project lifecycle. Your response should cover project management platforms, version control systems, CI/CD automation tools, testing frameworks, monitoring solutions, and communication tools.

a. **Project Management:** Describe the project management platform(s) you use (e.g., Jira, Azure DevOps) and the capabilities they provide for project tracking, sprint management, and reporting.

b. **Version Control:** Describe your version control system (e.g., Git with GitHub / GitLab / Bitbucket) and how it enables team collaboration, tracks code changes, and supports branching strategies.

c. **CI/CD:** Describe the automation platforms you use (e.g., Jenkins, GitHub Actions, Azure Pipelines) to continuously build, test, and deploy code changes.

d. **Testing:** Describe the testing tools you employ (e.g., Selenium, Jest, Cypress, JMeter) for different testing types and comprehensive quality coverage.

e. **Monitoring:** Describe the application performance monitoring tools you use for real-time monitoring of application health, performance, errors, and user experience.

f. **Communication:** Describe the collaboration tools you use (e.g., Slack, Microsoft Teams, Zoom) for instant messaging, video conferencing, and file sharing.

8.0 Indictive priority-wise functional areas of DSS (to be further reviewed and refined in the final TOR)

The entire DSS implementation will be carried out as a large phased program spanning 18 (eighteen) months for design, development, and implementation, followed by 12 (twelve) months of maintenance and technical support. Under this initiative, the PKSF Integrated Systems Platforms program has identified a total of 60 (sixty) functional areas for automation, including at least three mobile applications. These functional areas are organized into four primary domains to ensure comprehensive system coverage, integration, and scalability. The first domain focuses on Digital Financing, enabling borrower-centric, data-driven financial services through GIS-based dynamic member profiling, demand-driven and trusted borrower loan management, progressive loan assessment and online loan approval mechanisms. The second domain emphasizes Partners and Borrowers Integration, facilitating seamless collaboration, interoperability, and secure data exchange between PKSF, its partner organizations, and borrowers throughout the service lifecycle. The third domain encompasses Internal Systems, including both the core modules of existing legacy software modules of PKSFIIS and additional new modules required to strengthen internal operations, governance, monitoring, and institutional efficiency. The fourth domain covers Cross-Functional Components, consisting of application-wide services, shared platforms, analytics, and mobile applications designed to provide accessibility, interoperability, and support for end-to-end digital processes across the DSS ecosystem. Together, these four domains establish the foundation for a cohesive and scalable automation strategy under the DSS framework. This structured approach enables PKSF to follow a clear roadmap beginning with digital financing and integration, strengthening core internal systems, expanding cross-functional and mobile capabilities, and ultimately evolving into a comprehensive, AI-enabled, and data-driven institutional ecosystem.

Area Classification	Priority	Sl.	Functional Area
Digital Financing	1st	1	**GIS Based Dynamic Member Profile** • Member/Borrower density & overlap Mapping • Dynamic Member information including loan, grant & other services
		2	Demand Driven Trusted Borrower CC Loan Management
		3	Progressive Borrower Loan Assessment
		4	I Approve My Loan

Area Classification	Priority	Sl.	Functional Area
		5	Mobile Apps (Promoting QR Code-based Payment System)
Partners and Borrowers Integration	1st	1	**a. Loan Operations Management** i. Loan Demand, application from PO ii. Loan Sanction, approval and Disbursement iii. Automated Promissory note, Loan Agreement iv. Offsite Monitoring tools v. Visit Report Management vi. Automated Memo for Meetings (Board, Loan Committee, CC) **b. Sectoral Overview (Microfinance Sector Intelligence)** i. National overview; trends in outreach ii. Efficiency, portfolio quality, and financial ratios iii. Banks & NBFIs vs MFIs comparison **c. PKSF Partner Organization (PO) Reports** i. Landscape of POs by size, region ii. PO performance vs sector medians (operational, quality, financial) **d. Loan Distribution & Growth** i. Loan info by sector/sub-sector and by region. ii. Year-wise growth: PKSF, bank loans, fixed assets. iii. Concentration and diversification indicators. **e. Multiple Borrowing Scenario** i. NID based unique ID of borrowers across POs. ii. Prevalence and risk summary (counts, rates). iii. Overlap with grant/non-financial service recipients. **f. Programs & People** i. PO social/development programs and coverage. ii. Employment metrics and trends, Member profiles and staff information snapshots. **g. Comparative Analysis (Sector vs PKSF Global)** i. Overview/performance metrics. ii. Fund composition and growth of key parameters. iii. Sector/sub-sector and lender-type (Banks/NBFIs vs Sector vs PKSF) contrasts. **h. Comparative Analysis (Inter-PO)** i. Benchmarking across POs on core KPIs. ii. Asset/Liabilities composition differences and growth trajectories. iii. Sub-sector mix comparisons.
		2	**PO Profile** -Branch Profile
		3	**GIS Based Resource Planning** i. Resource Planning Map ii. Regional Cluster Mapping iii. Livelihood mapping iv. Branch locations and coverage maps.

Area Classification	Priority	Sl.	Functional Area
		4	POs AIS, MIS Data
		5	PO Rating System
		6	New PO Enrolment
		7	Early Warning System
		8	Development Partner Management
	2nd	1	Program & Project Management System (PPMS)
		2	GCF-RHL Project
		3	SMART Project
		4	Integrated Agriculture
		5	Grievance Redressal Mechanism (GRM)
		6	Organizational Performance Excellence Framework (OPEF/ BSC)
		7	Risk Management Framework (RMF)
		8	Other Relevant Functional Area
Internal Systems Automation	1st	1	**Audit Management** i. Auditing tools for auditing MIS and AIS Software of PO ii. Annual Audit Plan iii. PO Audit iv. Automated Audit Report v. Internal Audit vi. External Audit Management
		2	**Human Resources (HR) Management** i. Employee Profile ii. Complete life cycle Management
		3	Payroll Management
		4	Annual Budget Management, Budget Variance Analysis and Fund Management
		5	Annual Procurement Plan (APP) Management
		6	General Service (Procurement & Contract Management)
		7	Management Information System (MIS)
		8	PKSF Board's Activity Management
	2nd	9	Finance & Accounts Management
		10	General Service (Fixed Asset)
		11	General Service (Inventory Management)
		12	General Service (Logistics)
		13	General Service (Maintenance)
		14	PKSF Training Center Management
		15	PF, Gratuity and Pension Management
		16	Employee Loan
		17	Communication & Publication
		18	Digital Media Archive
		19	Library Management
		20	Law
		21	Research and Development
		22	AI/LLM Integration (analysis) & AI Assistant
		23	Other Relevant Functional Area
Cross Functional	1st	1	RBAC based Workflow Management System
		2	Role-Based Access Control (RBAC) System

Area Classification	Priority	Sl.	Functional Area
Systems Automation		3	Business Rules Management (BRMS) System
		4	External User Access Control (EUAC) System
		5	Reports & Templates Management
		6	Notification Management
		7	Committee Management
		8	Meeting Management
		9	Document Management System
		10	Employee Dashboard
		11	Employee Self Service (All types application Requisitions)
		12	Mobile Apps
	2nd	13	Knowledge Management System (KMS)
		14	Mobile Apps
		15	Support Service Management (Ticketing System)
		16	Other Relevant Cross Functional Area
Total		**60**	

9.0 Proposal Submission Requirements

i. **Deadline:** December 07, 2025, 2:30 PM Bangladesh Standard Time (BST). Proposals received after this deadline will not be considered unless PKSF explicitly grants extensions to all Software Development Firms.

ii. **Format:** Electronic submission in PDF format. The PDF should be searchable with bookmarks for major sections to facilitate review.

iii. **Submission Method:** The interested software development firms are requested to submit their expression of Interest electronically to mashiar_rahman@yahoo.com and the 2 (two) hard copies of EOI proposal marked as 'ORIGINAL' and other as `COPY' in a sealed envelope at the PKSF Bhaban-1, Plot: E-4/B, Agargaon Administrative Area, Sher-e-Bangla Nagar, Dhaka-1207 directly or by courier/mail on or before the date and aforementioned time. Software Development

iv. **Naming Convention:**
   a) **Softcopy:** CompanyName_PKSF_DSS_Proposal_2025.pdf (replace CompanyName with Software Development Firm's name)
   b) **Hardcopy:** The envelope should be clearly marked on: “Selection of Software Firm for the Design, Development and Implementation of PKSF Decision Support System (DSS).”

v. **Page Limit:** 60 pages for main proposal document (excluding appendices). Appendices are not subject to page limits but should be organized clearly.

vi. **Language:** English is the primary language. Bengali translations of key sections are appreciated and will be considered favourably, though English version remains authoritative.

vii. **Proposal Validity:** Proposals must remain valid for 90 days from submission deadline to allow for evaluation, negotiations, and contract finalization.

10.0 Team Composition and Resource Requirements

The unified **Decision Support System (DSS)** will be **designed, developed, and implemented as a complete turnkey solution**, built on an **interoperable and integrated systems platform**. The DSS will serve as a central analytical and decision-support infrastructure that consolidates data from multiple operational domains of PKSF and its Partner Organizations (POs), ensuring seamless data exchange, process automation, and evidence-based decision-making across institutional levels.

The project team must demonstrate **proven expertise in enterprise-grade software engineering**, strictly adhering to **industry-standard Software Development Life Cycle (SDLC)** methodologies and **recognized project management frameworks**. The team shall be responsible for delivering a **production-ready, fully functional, and secure system** that meets all technical, functional, and operational requirements set forth in the project's scope.

The team will comprise **highly skilled and multidisciplinary professionals** to ensure the successful design, development, and deployment of the unified DSS. Key personnel will include:

- **Project Managers**, responsible for leading, planning, and coordinating all project activities, ensuring timely delivery, compliance, and quality assurance in line with PKSF's governance standards.
- **Business Analysts**, tasked with conducting requirement analysis, stakeholder consultations, and process mapping to translate institutional needs into precise technical specifications.
- **Solution Architects**, who will design the system's overall technical architecture, ensuring integration, interoperability, scalability, and security of all modules.
- **Backend and Frontend Developers**, responsible for developing scalable, modular components using enterprise-grade frameworks, ensuring performance efficiency and maintainability.
- **Mobile Application Developers**, who will design and build mobile interfaces compatible with both Android and iOS platforms to ensure accessibility and user convenience.
- **Data Migration Specialists**, responsible for ensuring the accurate, secure, and seamless transfer of data from legacy systems into the new environment.
- **Quality Assurance (QA) Engineers**, who will conduct systematic verification and validation through functional, performance, and security testing to ensure system integrity.
- **DevOps Engineers**, who will oversee system deployment, automation, and continuous integration and delivery (CI/CD) processes to maintain operational stability and efficiency.
- **UI/UX Designers**, who will create intuitive, accessible, and user-centric interfaces aligned with PKSF's service delivery standards.
- **AI Engineers**, who will design, develop, and deploy **AI-driven solutions integrated within enterprise systems** to enhance analytics, automation, and intelligent decision-making capabilities.
- **Business Intelligence (BI) Specialists**, with proven experience in developing and implementing **Business Intelligence (BI) solutions**, including data visualization, dashboarding, and predictive analytics tools to support evidence-based policy and management decisions.
- **Technical Writers**, responsible for preparing comprehensive system documentation, training manuals, and user guides to facilitate effective knowledge transfer and capacity building.

  All designated team members must remain **fully available and dedicated throughout the entire project duration**, ensuring continuity, accountability, and sustained progress. No team member shall be assigned to other concurrent projects during the implementation phase to guarantee full-time commitment and focus on achieving the project's objectives within the agreed timelines.

The **detailed description of team composition, roles, and resource requirements** will be incorporated in the **final Terms of Reference (TOR)** of this assignment and provided with the **Request for Proposal (RFP)** documents.

11.0 Requirement of the Software Development firm

Interested software development firms are encouraged to participate through Joint Venture (JV) arrangements. Joint Ventures in which both the Lead Firm and each partner firm independently and separately meet all eligibility and qualification criteria, will be given

strong preference during evaluation. Such collaborations are expected to enhance technical capacity, ensure comprehensive coverage of required expertise, and strengthen overall project delivery.

i. The firm should have 7 (seven) years of successful experience in software project design and development, including:
   a) Must have experience in developing and delivering at least 1 (One) full-scale enterprise-level system (i.e. ERP/Core Banking Solutions/Digital Financial (FinTech) Solutions)**,** implemented as on-going complete solution in last five (05) years with a combined value of BDT 10.00 (ten) crore.

      Or

      Must have experience in developing and delivering large-scale enterprise applications implemented as on-going complete solution in last five (05) years with a combined value of BDT 10.00 (ten) crore.
   b) Must have experience in developing, deploying, and maintaining at least 2 (two) enterprise-level interactive mobile applications for both Android/iOS platforms, integrated with secure and scalable backend systems in last 5 (five) years. (A two-page brief case study describing the scope, technology stack, key features, user base, and mobile application development, deployment, and maintenance methodology used.)
   c) Must have demonstrated successful experience in cross platform data migration, both from commercial and open-source databases, involving large-scale databases and mission-critical systems, including data extraction, transformation, loading (ETL), data quality assurance, and seamless migration from legacy to modern systems without data loss or service interruption. (A two-page brief case study describing the scope, technology stack, data volume, and migration methodology used.)
   d) Must demonstrate software development and software service-delivery contracts with a cumulative value of at least BDT 40 crore (Taka forty crore) executed within the last five (5) years including both software development contract and relevant Service Level Agreements (SLAs).

ii. The software development firm must have proven expertise in the following technology stack:

PostgreSQL, React.js/Angular.js/Vue.js, Java (Spring Boot or other relevant well known Java frameworks), Flutter, and microservices-based architecture. Experience in NoSQL database, Spring Cloud, Python language will be considered as added expertise. The firm must provide evidence of this expertise in the last 5 (five) years through project summaries, architectural diagrams, or deployment documentation, while ensuring adherence to any applicable non-disclosure agreements (NDAs).

iii. The software development firm with the following expertise will be given preference:

a. Demonstrated experience in developing and implementing Business Intelligence (BI) solutions, such as Teradata or equivalent platforms.
b. Demonstrated expertise in conducting proofs of concept (POC), prototyping, and end-to-end development and deployment. (Non-sensitive mock-ups, prototypes, architecture diagrams, or screenshots that illustrate the firm's capabilities while keeping client-specific data confidential.)
c. Proven experience in designing, developing, and deploying AI-driven solutions integrated into enterprise systems. This includes experience in implementing natural language processing (NLP), predictive analytics, recommendation engines, anomaly detection, or intelligent chat/virtual assistants.

iv. Certifications and Memberships

a) **Mandatory Requirements:** The following certifications and memberships are compulsory for eligibility:

1. Active and valid membership with the Bangladesh Association of Software and Information Services (BASIS).

b) **Preferable Requirements:**

The following certifications and recognitions are not mandatory but will be considered added advantages during evaluation:

1. CMMI (Capability Maturity Model Integration) Level 3 or above certification for software development processes. ISO certifications demonstrate adherence to international standards.
2. Cloud partnership certification with at least one major global cloud platform (e.g., AWS, Microsoft Azure, Google Cloud Platform, VMware or Oracle Cloud).

12.0 Software Development Firm (National) Selection Process (TO BE FINALIZED BY THE PROCUREMENT UNIT)

Quality and Cost-Based Selection (QCBS) method and Standard Request for Proposal (SRFP: PS-7A) documents on lump sum contracts of Schedule 1 of the Public Procurement Rules-2008 of the Government of Bangladesh shall be followed in the selection process.

13.0 Mode of Payment (to be incorporated in the final TOR)

Special note: This Terms of Reference (TOR) is a draft TOR for this assignment. The final and refined TOR will be issued with the Request for Proposal (RFP) documents.