PRELIMINARY TERMS OF REFERENCE MANAGEMENT INFORMATION SYSTEM (MIS)

Consulting Services for Expression of Interest for Design, Development and Maintenance of a Management Information System (MIS) for Annual Work Planning, Budgeting, Budget Execution Reporting and Project Performance Analytics

Reference	**ZMB-2000004924-0075-CS-QCBS**
Procurement Method	Quality and Cost Based Selection (QCBS)
Contract Type	Lump-Sum Deliverables-Based with Time & Materials option for warranty period
Indicative Duration	Six (6) months to production go-live, plus twelve (12) months warranty and post-implementation support

1. About the Project

The Financial Inclusion for Resilience and Innovation Project (FIRIP) was launched in February 2026 under the Ministry of Finance and National Planning, with financing from International Fund for Agricultural Development (IFAD). The objective of the project is to support improved access to and use of financial services to strengthen resilience and green growth of rural production systems, value chains, and the livelihoods of poor rural men, women and youth in Zambia.

This will be achieved through;

(i) improved availability of client-centric financial services for specific sectors and target groups in rural areas;

(ii) increased use of suitable and affordable financial services by the target groups, and,

(iii) an enhanced enabling environment for the provision of inclusive rural financial services.

FIRIP is designed to be implemented through a combination of financing and capacity-building mechanisms meant to expand inclusive rural financial services. These include the Innovation and Outreach Facility (IOF), which supports implementing partners to develop and deploy client-centric financial products and delivery mechanisms tailored to underserved/ unserved rural populations — including smallholder farmers, women, youth, and rural Micro, Small and Medium Enterprises (MSMEs). The IOF is complemented by the Blended Finance Facility (BFF), which is also intended to mobilise private-sector capital for financial inclusion, agriculture value chains and green investments while reducing the cost of funds for Financial Service Providers (FSPs) and improving the affordability of finance for end users.

In addition, FIRIP strengthens the broader ecosystem for inclusive rural finance through targeted technical assistance and strategic partnerships, including policy and regulatory support and capacity building for key stakeholders to address systemic constraints affecting the delivery of rural financial services. Project implementation is coordinated by a dedicated Project Management Unit (PMU), with multiple Implementing

Partners (IPs), Financial Service Providers (FSPs), and other stakeholders contributing to project execution and reporting.

2. Purpose of the Assignment

The Project Management Unit (PMU) requires a secure, scalable, cloud-ready, web-based Monitoring and Evaluation /Management Information System (MIS) that will enable it to:

(1) Prepare, consolidate, revise and approve the Project's Annual Work Plan and Budget (AWPB) in the donor-prescribed multi-dimensional format, supporting bottom-up planning across components, sub-components, partners and geographical units;

(2) Monitor budget execution against the approved AWPB activities in near real time by integrating with the project's TomPro accounting package (the authoritative system of record for transactional accounting, if possible);

(3) Provide consolidated portfolio-level analytics across the IOF, BFF and Technical Assistance windows, including drill-down to partner, district and beneficiary level.

The MIS shall operate alongside, and not replace, (i) TomPro — the authoritative system for transactional accounting and the general ledger, and (ii) the Project's Monitoring and Evaluation (M&E) system (procured separately under a different ToR) — the authoritative system for indicator, logframe and beneficiary tracking. The Consultant shall, however, design the MIS with documented, future-ready integration points to both TomPro and the M&E system.

3. Project Context and Technical Baseline

The Consultant shall design the M&E/MIS with full awareness of the following operating context:

- **Concurrent users:** approximately ten (10) PMU users with full read/write privileges; up to five (5) named read-only partner and oversight users; and up to Fifty (50) intermittent reporting users from FSPs and IPs during peak AWPB preparation windows.
- **Data volume (7-year horizon):** indicative ceilings of 50,000 budget lines, 250,000 commitment and expenditure records, 25,000 contracts and supporting documents, and 100 GB of attachments.
- **Geographic distribution:** users in Lusaka and across all ten (10) provinces of Zambia, including users on intermittent or low-bandwidth (3G) connections. The system shall therefore be lightweight, mobile-responsive and capable of graceful degradation on low bandwidth.
- **Existing systems:** TomPro (accounting); Microsoft 365 (identity, productivity, e-mail); the FIRIP M&E platform; and the Ministry of Finance ICT shared services (network, helpdesk, backup).
- **Donor reporting standards:** AWPB template in IFAD-prescribed multi-dimensional format; Interim Financial Reports (IFRs) on a quarterly basis;
- **Regulatory environment:** Zambia Data Protection Act, 2021 (Act No. 3 of 2021); Electronic Communications and Transactions Act, 2021; Public Procurement Act, 2020 and its 2022 Regulations.

4. Scope of Work — Functional Requirements

The Consultant shall design, develop, test, deploy, train on, document, and provide warranty support for the following functional modules. The numbering below shall be used as the reference for the Requirements Traceability Matrix (RTM) deliverable.

4.1 AWPB Preparation, Revision and Approval

- Multi-year and annual work plan and budget preparation in the donor-prescribed format, supporting both bottom-up (partner / activity-driven) and top-down (envelope-driven) approaches in the same cycle.
- **Mandatory multi-dimensional coding** on every budget line, including: Component, Sub-component, Output, Activity, Cost Category, Implementing Partner, Province/District, Financier (IOF / BFF / TA / Government counterpart), Disbursement Category, Gender Marker, Youth Marker, and Climate Marker.
- In-year reallocations and supplementary budgets, with side-by-side comparison of approved vs. revised vs. proposed positions.
- Versioning of every budget cycle with the ability to restore, compare and export prior versions in Excel and PDF.
- M&E indicator and logframe tracking, beneficiary-level activity tracking

4.2 Commitment, Contract and Off-TomPro Expenditure Capture

- Capture and tracking of contracts, purchase orders, framework agreements and direct donor payments that are not posted to TomPro at the time of commitment.
- Document attachment for each commitment (signed contract, no-objection, invoice, proof of payment) with virus scanning and a maximum single-file size of 25 MB.
- Automatic computation of available budget = approved budget − cumulative actuals − outstanding commitments, with hard-block or soft-warning controls configurable per budget line.
- Multi-currency support (ZMW, USD, EUR, GBP) with daily exchange-rate ingestion from the Bank of Zambia daily rates feed and at-commitment / at-payment rate locking.

Digital-first approach. Paper-based data collection is time consuming; the workload is higher; mistakes are easily made and difficult to rectify; and updating and distributing forms is cumbersome. A shift to electronic data collection is therefore strongly encouraged.

Timeliness. Some projects take years to operationalize digital tools – this can even be after the Mid-term Review (MTR). They must then process a large backlog of poorly structured data. Given the medium-term nature of IFAD projects, rapid setup of digital tools with basic functionality is preferable, rather than aiming for an elaborate and sophisticated system.

Flexibility. M&E data requirements can change during implementation, while user experience – especially with an initially basic system – can also lead to a need for modification. The digital tools used should be flexible enough to accommodate this at a reasonable cost.

Simplicity. The setup of digital tools is directly related to the M&E data itself. Data collection is costly and should focus on critical data only. However, while designing forms or a data model, there is a risk of adding "nice-to-

know" data as additional requirements to key indicators in Logframes. This can complicate the system and increase the data collection workload, which should be avoided.

Ease-of-use. Digitalizing M&E can be effective only if the people involved have the necessary capacity to make good use of the digital tools. On the one hand, the tools should be user-friendly and aligned with the capacities of project staff, rather than be overly complex. On the other hand, staff capacity will have to be enhanced: the M&E Officer is likely to need an assistant to administer the digital toolbox and analyse data; while project staff will require training and backstopping in the use of tools for electronic data collection and validation.

Provide offline options. IFAD projects often work in remote areas and fragile contexts, where mobile network coverage can be poor or absent. Offline data collection on electronic devices should therefore be possible, with synchronization once internet access becomes available.

Ensure data quality. To reduce mistakes and issues with incomplete data, initial checking and cleaning during data collection should be maximized (e.g. mandatory responses, validation rules).

Secure data storage. M&E data can be compromised when it is stored on individual computers that could crash, be lost or stolen, or because an individual leaves the project without proper handover. Digital tools should include secure storage of M&E data on local or cloud-based servers, with role-based access (e.g. data entry, validation, administrator, developer) and regular backup.

Data protection and responsible data use. Collect only data that is necessary; ensure informed consent where applicable; protect personal and location data through role-based access, encryption where possible, and audit trails; and define clear rules for data retention, sharing and disposal in line with national requirements and IFAD expectations.

When project implementation starts, priorities for the M&E system and digital toolbox should be:

- **Quick setup** of a basic system focused on data collection and storage (about six months from concept to rollout); other tasks can be added more gradually over time (processing, reporting).
- Providing **digital tools for electronic data collection**, rather than paper-based tools.
- **Enhancing staff capacity** at all levels, to effectively manage and make use of the digital toolbox.

4.3 Reporting, Dashboards and Analytics

- **Standard donor reports**: AWPB, Reported expenditure against the planned activities in the Workplan, partner sub-grant utilization reports.
- **Management dashboards** (role-based) showing burn-rate, absorption capacity, partner performance, geographic distribution of disbursements, gender/youth/climate marker exposure, and forecast vs. plan.
- **Self-service ad-hoc reporting** allowing power users to build and save their own queries against a curated semantic layer, without writing SQL.
- Scheduled report distribution (PDF and Excel) to defined recipient lists by e-mail with optional password protection.
- Drill-down from any aggregate indicator to the contributing specific indicators and source documents in a maximum of three clicks.

- Public-facing read-only transparency view (optional, toggleable) showing aggregated, anonymized programme results for Implementing Partners.
- **Knowledge Management and Learning** Lessons learnt, stories and case studies will be included on the KM and learning tab. There should be reasonable space to allow for Partners to include summaries of lessons from implementation as well as stories that can be shared to users.

4.4 Master Data, Partner and Beneficiary Registers

- Centralized master data for Implementing Partners, Financial Service Providers, vendors, banks, currencies, exchange rates, chart of accounts, organisational units and geographic units (provinces, districts) aligned to the Central Statistical Agency codes.
- Read-only synchronization with the M&E module's beneficiary register via documented API contract.
- De-duplication tooling and merge workflow with audit trail.

4.5 Training, Documentation and Handover

- Role-based training for PMU users (classroom and recorded), train-the-trainer sessions for Ministry of Finance ICT staff, and self-paced video micro-learning embedded in the application.
- Full transfer of source code, infrastructure-as-code, build pipelines, configuration, and run-books to the Ministry of Finance ICT department on or before go-live.
- Source code escrow with a Ministry-approved third-party escrow agent.

4.8 Out of Scope

The following are explicitly out of scope of this assignment:

(i) General ledger accounting and transaction processing (handled exclusively by TomPro);

(ii) payroll and HR;

(iii) integrations with any system other than TomPro, unless expressly added by a written change request.

5. Technical Requirements

Bidders shall describe how their proposed solution meets each of the following non-functional and architectural requirements. A Requirements Traceability Matrix (Annex C of the full RFP) shall be completed for every requirement.

5.1 System Architecture

- **Architectural style:** modern, multi-tier web application following a service-oriented or modular monolith pattern, deployable as containerized workloads. Pure two-tier client-server designs will not be accepted.

- **Separation of concerns:** clear separation between presentation layer, application/business-logic layer, integration layer, and persistence layer, with documented interfaces between layers.
- **Stateless application tier** to enable horizontal scaling and zero-downtime rolling deployments.
- **Twelve-factor app** discipline: configuration in environment, logs to standout, dependency isolation, dev/prod parity.
- **Documented C4 model** (Context, Container, Component, Code) diagrams as part of the System Design Document.

5.2 Technology Stack

Bidders are free to propose their preferred stack provided it meets the following constraints. Open-source, royalty-free components are strongly preferred to minimize total cost of ownership and ensure long-term maintainability by Ministry ICT staff.

Layer	Acceptable Technologies	Notes
Backend runtime	Python 3.11+ (Django / FastAPI), Java 17+ LTS (Spring Boot 3.x), Node.js 20+ LTS, or .NET 8+	Any production-grade LTS runtime. Proprietary low-code platforms must be explicitly justified.
Frontend	React 18+, Angular 16+, or Vue 3+ with TypeScript	Server-side templating alone is not acceptable for the user-facing application.
Relational database	PostgreSQL 15+ (preferred), MySQL 8+, or Microsoft SQL Server 2019+	Must support ACID transactions, point-in-time recovery and logical replication.
Caching / queue	Redis 7+ or RabbitMQ 3.12+	For async jobs, integration retries and session caching.
Reporting / BI	Embedded library or open BI tool (e.g. Metabase, Apache Superset)	Proprietary BI licences shall be priced separately and transparently.
Containers / orchestration	Docker, Docker Compose (single-host) or Kubernetes 1.28+ (clustered)	Infrastructure-as-Code is mandatory.
CI/CD	GitLab CI, GitHub Actions, Azure DevOps, or Jenkins	See section 5.7 below.

5.3 Security

- **Standards alignment:** OWASP ASVS Level 2; OWASP API Security Top 10; CIS Benchmarks for the underlying OS, database and container runtime; ISO/IEC 27001:2022 control families where applicable.
- **Transport security:** TLS 1.2 minimum, TLS 1.3 preferred, on all external and internal HTTP endpoints. HSTS, secure cookie flags, and modern cipher suites only.

- **Authentication:** OAuth 2.1 / OpenID Connect; PKCE for all public clients; refresh-token rotation; MFA enforced for write roles.
- **Authorisation:** server-side enforcement on every API endpoint; principle of least privilege; no client-side-only authorisation.
- **Data at rest:** AES-256 encryption for database storage, attachments and backups, with key management documented and aligned to NIST SP 800-57.
- **Secrets management:** no secrets in source control; use of a vault solution (HashiCorp Vault, Azure Key Vault, AWS Secrets Manager, or equivalent).
- **Vulnerability management:** automated dependency and container scanning in CI (e.g. Trivy, Snyk, Dependabot); quarterly third-party penetration testing during warranty; remediation SLAs documented.
- **Personal data:** explicit compliance with the Zambia Data Protection Act, 2021 — including a documented Records of Processing Activities (RoPA), a Data Protection Impact Assessment (DPIA), data minimisation, retention schedules and a Data Subject Access Request (DSAR) handling procedure.
- **Audit logging** as specified in section 4.6, written to an append-only store and exportable to the Ministry's central log aggregator (if available).

5.4 Performance, Availability and Scalability

Metric	Target	Measurement
System availability (production)	≥ 99.5% per calendar month, excluding planned maintenance	Synthetic uptime monitoring every 60 seconds.
Planned maintenance window	Sundays, 22:00–02:00 Lusaka time, ≤ 2 windows per month	Notified ≥ 5 working days in advance.
Page load (95th percentile)	≤ 3 seconds for transactional pages on a 5 Mbps connection from Lusaka	Real-user monitoring on representative pages.
API response (95th percentile)	≤ 800 ms for read endpoints, ≤ 2,000 ms for write endpoints under nominal load	APM instrumentation in production.
Concurrent active users	≥ 50 sustained, ≥ 150 peak without degradation beyond the targets above	Load test report at UAT.
Report generation	Standard reports ≤ 10 seconds; large analytical reports ≤ 60 seconds (async with notification beyond 60s)	Measured on representative datasets.
Recovery Time Objective (RTO)	≤ 4 hours	Documented and tested DR runbook.
Recovery Point Objective (RPO)	≤ 1 hour	Continuous WAL archiving / equivalent.

5.5 Integration and Interoperability

- **API-first design:** every business capability exposed through documented, versioned RESTful APIs.
- **API documentation:** OpenAPI 3.1 specification published with the application; interactive Swagger UI / Redoc available in non-production environments.
- **Data exchange formats:** JSON for synchronous APIs; CSV and Excel for bulk import/export; ISO 20022 messaging considered for any future bank integrations.
- **Date, time and locale:** ISO 8601 timestamps with explicit time zone; Africa/Lusaka as the default display zone; English (en-ZM) as the default locale.
- **Identifiers:** UUID v7 (time-ordered) for all primary keys exposed externally; human-readable business reference codes generated separately.
- **Webhooks** for outbound event notification to the M&E platform and other future consumers, with HMAC-signed payloads and at-least-once delivery.

5.6 Hosting, Infrastructure and Data Sovereignty

- **Hosting options:** the Consultant shall present a comparison of
  (i) Government of Zambia data centre / SmartZambia hosting,
  (ii) a Tier III commercial data centre located within the Republic of Zambia, and
  (iii) a regional public cloud (Azure, AWS or Google) with a documented data residency arrangement. The Ministry reserves the right to select the hosting option at award.
- **Data residency:** Personal data and protected financial data of Zambian data subjects shall be stored and primarily processed within the Republic of Zambia, in line with the Data Protection Act, 2021. Any cross-border processing shall be subject to prior written approval and a documented Standard Contractual Clause or equivalent safeguard.
- **Environments:** at minimum four (4) environments — Development, Test/QA, User Acceptance Testing (UAT), and Production — with anonymized production-like data in UAT.
- **Backups:** automated daily database backups, weekly full backups, and monthly off-site backups, retained per the schedule defined in the System Design Document and verified by quarterly restore tests.
- **Disaster recovery:** documented DR plan with RPO $\leq$ 1 hour and RTO $\leq$ 4 hours, tested at least once before go-live and annually thereafter during warranty.

5.7 DevOps, CI/CD and Quality Engineering

- **Source control:** Git-based, with branch protection rules, mandatory peer review and signed commits.
- **CI pipeline:** automated build, unit tests, linting, SAST and dependency scanning on every pull request; merge blocked on failure.
- **CD pipeline:** automated deployment to Dev and Test environments on merge to main; gated deployment to UAT and Production with approval workflow.
- **Test coverage:** minimum 70% unit-test line coverage on backend business logic; integration tests for all TomPro integration paths; end-to-end smoke tests for critical user journeys.

- **Observability:** structured JSON logging, metrics (Prometheus-compatible) and distributed tracing (OpenTelemetry); dashboards in Grafana or equivalent; alerting integrated with the PMU communications channels.
- **Infrastructure-as-code:** Terraform, Ansible, Pulumi, or equivalent — no manual production changes outside the pipeline.
- **Documentation-as-code:** Architecture Decision Records (ADRs), API specs and runbooks stored alongside source code.

5.8 Usability and Accessibility

- **Responsive web design** working on screens from 320 px (mobile) to 2,560 px (large desktop), tested on the latest two major versions of Chrome, Edge, Firefox and Safari.
- **Accessibility:** WCAG 2.1 Level AA compliance for all user-facing screens; an accessibility statement published with the application.
- **Localisation-ready:** strings externalised to resource files; date, number and currency formatting via standard libraries to enable future localisation into local languages (Bemba, Nyanja, Tonga, Lozi) if requested.
- **Offline-tolerant** behaviour for low-bandwidth users: optimistic UI, draft auto-save, and graceful retry on intermittent connectivity.

6. Standards and Compliance

The Consultant's deliverables shall demonstrate alignment with the following standards and frameworks:

- **Software engineering:** ISO/IEC 12207 (software lifecycle); ISO/IEC 25010 (product quality model).
- **Security:** ISO/IEC 27001:2022; OWASP ASVS L2; OWASP API Security Top 10; CIS Benchmarks.
- **Data protection:** Zambia Data Protection Act, 2021 (Act No. 3 of 2021); Electronic Communications and Transactions Act, 2021.
- **Public financial management:** Public Finance Management Act, 2018; IPSAS Cash Basis reporting; Public Procurement Act, 2020 and 2022 Regulations.
- **Project management:** PMI PMBOK Guide (7th edition) or PRINCE2 principles for project governance; Agile/Scrum or hybrid delivery method for implementation, as proposed by the Consultant.

7. Implementation Methodology and Phasing

The Consultant shall propose a phased delivery approach with clearly defined gates. The indicative phasing below shall be refined and committed in the Inception Report:

Phase	Key Activities and Gate Criteria
Phase 0 — Mobilisation and Inception	Project kick-off; stakeholder mapping; refined work plan; updated risk register; Inception Report (signed off by the PMU).

Phase	Key Activities and Gate Criteria
Phase 1 — Discovery and Design	Detailed requirements workshops; functional and non-functional specifications; System Design Document (architecture, data model, integration design, security design, UX wireframes); Requirements Traceability Matrix v1; gate: design sign-off.
Phase 2 — Build (Iterative)	Two-week sprints with demos to the PMU; module-by-module delivery as per section 4; continuous integration to Dev and Test environments; weekly burn-down reporting.
Phase 3 — System Integration Testing & UAT	Integration test with TomPro; security testing including third-party penetration test; performance / load testing against the targets in section 5.4; UAT with PMU and partner users; gate: UAT sign-off.
Phase 4 — Deployment, Training and Go-Live	Production deployment; data migration where applicable; role-based training; cutover; hyper-care for the first two weeks post go-live.
Phase 5 — Warranty and Support	Defect remediation under SLA; minor enhancements within the warranty envelope; quarterly DR test; final implementation report.

8. Key Deliverables

The following deliverables are tied to the payment milestones in the financial proposal. All written deliverables shall be submitted in PDF and editable Word/Excel format; all source artefacts shall be submitted through the agreed Git repository.

#	Deliverable
D1	Signed Inception Report including work plan, risk register, governance and communications plan
D2	System Design Document, Requirements Traceability Matrix v1, UX wireframes and clickable prototype
D3	Working M&E/MIS in UAT environment with all functional modules and security and load test reports;
D4	Signed UAT sign-off; production deployment; user manuals; admin manual; training delivered; train-the-trainer completed
D5	Three-month post go-live operational review with KPIs against the SLA in section 5.4
D6	Final implementation report at end of warranty; full source code, and documentation handover

9. Eligibility and Minimum Qualifications

Bidders shall meet **all** of the following minimum requirements. Bidders not meeting any one criterion will be eliminated at the preliminary evaluation stage.

- Zambia owned organization legally incorporated and registered in the Republic of Zambia.
- PACRA Print out showing share holders
- Valid Tax Clearance Certificate from the Zambia Revenue Authority (ZRA).
- Valid National Pension Scheme Authority (NAPSA)
- Valid Workers' Compensation Fund Control Board
- Minimum five (5) years of continuous operation as an ICT solutions firm
- At least three (3) successfully completed assignments of similar scope (web-based MIS / ERP / PFM / grant management / financial inclusion platforms) within the last five (5) years.
- At least one (1) completed assignment with a donor-funded project (IFAD, World Bank, AfDB, EU, USAID, GIZ, FCDO, UN agency or comparable).
- Not debarred or suspended by the Government of Zambia, the World Bank Sanctions Board, the African Development Bank Office of Integrity, or any other recognized procurement sanctioning body.

10. Key Experts Required

Bidders shall propose, as a minimum, the following key experts. CVs in the prescribed format (Annex D of the full RFP) shall be submitted for each. Substitution of any key expert after contract signature requires the prior written consent of the Ministry.

Role Code	Role	Consolidated Responsibilities	Minimum Qualifications & Experience
KE - 1	Team Leader/ M&E System and Solution Architect	Overall protect management, client/ donor liaison and technical architecture. Leads M&E framework design. Ensures system aligns to project Theory of Change and M&E requirements and Reporting.	Master's in IT, Computer Science, Engineering, Project Management, Agriculture Economics or related field. Minimum of 10 years' experience leading enterprise software delivery and MIS/M&E systems. PMP/ PRINCE2/PMI-ACP Certified. Led at least 2 donor-funded MIS/ERP/PFM engagements. Cloud architecture experience preferred
KE - 2	Lead Full-Stack Developer / Integration & DevOps Engineer	End-to-end system build: backend, frontend, database, APIs, and TomPro/other integrations. Owns CI/CD, cloud deployment, containers, and system performance/security baselines	Bachelor's in Computer Science or related. Min 8 years full-stack development in Python, Java or .NET + React/Angular/Vue with TypeScript. Min 5 years with PostgreSQL at scale, API integrations, and containerized CI/CD deployments. Experience integrating TomPro or similar ERP/PFM systems. Cloud cert AWS/Azure/Google preferred. Portfolio with WCAG 2.1 AA interfaces

KE - 3	Business Analyst / QA Lead / Training & InfoSec Specialist	Requirements elicitation, test strategy, UAT, data quality, and user adoption. Leads info security: requirements, 3rd party pen-test coordination. Develops training materials and documentation and delivers TOTs	A minimum of a Bachelor's degree in IT, Business, or related field. Minimum of 7 years in BA and QA on enterprise systems. ISTQB Foundation minimum, CBAP/IIBA preferred. Minimum of 5 years designing user training plus technical documentation. Instructional design qualification preferred. Minimum of 5 years in application security and coordinating penetration testing. CISSP/CISM preferred

11. Warranty and Post-Implementation Support

The warranty period shall commence on production go-live (D4 sign-off) and shall last twelve (12) months. During this period the Consultant shall provide the following at no additional cost:

Severity	Definition	Response Time	Resolution Target
S1 — Critical	Production system unavailable; data loss; security breach	30 minutes (24/7)	4 hours
S2 — High	Major function unavailable, no workaround	2 working hours	1 working day
S3 — Medium	Function impaired or workaround available	1 working day	5 working days
S4 — Low	Cosmetic or minor issue	2 working days	Next minor release

Warranty support shall include all defect remediation, security patching, dependency updates, and minor enhancements up to a cap of forty (40) person-days per quarter. Larger enhancements shall be priced under a separate time-and-materials annex.