KM SOLUTIONS
DATA & AI AUTOMATION

BIDDING ATTACHMENT 02 / TECHNICAL PROPOSAL

TECHNICAL PROPOSAL SPECIFICATION.

SYSTEM ARCHITECTURE & DELIVERY PLAN

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PROJECT OVERVIEW

Understanding of the Challenge & Objective

This technical proposal presents KM Solutions' (Khoi Minh Technology Solutions MTV Co., Ltd) engineering strategy, architecture, and phased execution plan for the target automation initiative.

PROJECT TITLE	**[Target Enterprise Platform]**	CLIENT / BUYER	[Client Organization Name]
TENDER / RFP REF	**RFP-2026-KMTS-001**	SUBMISSION DATE	September 2026

Scope Interpretation & High-Level Objectives

Based on the tender specifications and preliminary discovery, the solution must eliminate manual bottlenecks, provide centralized real-time observability, and enforce strict auditability across distributed operational nodes.

Core Operational Goals

- Automated data capture & ingestion from edge nodes
- Sub-second anomaly detection & routing
- Zero manual data re-entry or CSV reconciliations

Governance & Reliability Requirements

- Role-based granular permissions & MFA
- Immutable audit log of all system transitions
- 99.95% operational availability SLA

Guiding Engineering Principles

UNATTENDED RELIABILITY

PROVABLE ACCURACY

MAINTAINABLE LIFECYCLE

SOLUTION ARCHITECTURE

Modular, Decoupled & Resilient Architecture

The target architecture separates data ingestion, validation pipelines, core transactional services, and visualization tiers to ensure high throughput and zero cascading failures.

Edge / Client Ingestion	Stream Processing & Validation	Transactional Core & Permissions	Observability & Dashboards
REST / GRPC IOT / MQTT	REDIS STREAMS FASTAPI / CELERY	POSTGRESQL DJANGO / GRAPHQL	REACT / TAILWIND GRAFANA / PROMETHEUS

Architectural Components & Technology Choices

Ingestion Layer	High-concurrency async endpoints capable of receiving instrument packets and sensor telemetry with immediate token authentication.
Processing & Validation	Stateless worker queues for schema validation, anomaly detection, payload sanitization, and automated routing.
Data Storage & Audit	Relational schema with strict foreign keys and append-only audit trail tables capturing actor, timestamp, prior state, and new state.
Access & User Interface	Single-page responsive dashboard built with TypeScript and Tailwind CSS, featuring real-time data push via WebSockets.

Security & Compliance Controls

TLS 1.3 IN-TRANSIT	AES-256 AT-REST	OIDC / SAML SSO	ROLE-BASED RBAC	AUDIT LOGGING
CONTAINER SCANNING	SECRET ROTATION	HOURLY BACKUPS	DISASTER RECOVERY	STAGING ISOLATION

DELIVERY PLAN

Phased Roadmap & Milestone Schedule

Execution follows KM Solutions' 5-stage delivery model. Each milestone concludes with a concrete review checkpoint and acceptance sign-off.

#	PHASE	KEY DELIVERABLES & ACCEPTANCE	DURATION
M1	**Discovery & Architecture**	Detailed requirements specification, interface contracts, schema designs, and sprint backlog approval.	Weeks 1–2
M2	**Core Engine & Pipelines**	Data ingestion pipelines, database schemas, processing queues, and initial CI/CD staging deployment.	Weeks 3–6
M3	**UI & Controls**	Responsive web application, permission management, audit trail viewer, and live notifications.	Weeks 7–10
M4	**Validation & UAT**	End-to-end integration testing, security scans, load validation, and formal user acceptance sign-off.	Weeks 11–12
M5	**Deployment & Handover**	Production cutover, system documentation, admin training, and 30-day warranty stabilization support.	Weeks 13–14

Assumptions & Dependencies

Client Responsibilities

- Timely provision of test credentials and API access
- Designated Single Point of Contact (SPOC) for reviews
- Review feedback within 3 business days of checkpoint

KM Solutions Commitments

- Bi-weekly live sprint demonstrations on staging
- Transparent issue tracker access and test logs
- Full source code, deployment scripts, and handover documentation

BID PROFILE NOTE

Acceptance criteria are strictly tied to objective test suites executed in the agreed staging environment prior to production cutover.