UDC Sourcing & Tendering – Backend Documentation

This document provides a full backend blueprint for the UDC Sourcing & Tendering solution. It includes the database schema, entity relationship diagram, workflows, API contracts, notifications, seed data, and reporting ideas. It maps directly to the frontend prototype provided.

# Database Schema

See attached SQL schema defining users, suppliers, RFx headers, bids, evaluation, committee, awards, contracts, workflows, audit, and notifications.

# Entity Relationship Diagram

Mermaid ERD available in `erd.mmd` file. Import into any Mermaid renderer (e.g., VS Code extension or mermaid.live).

# Workflows

RFx lifecycle (Draft → Published → Closed → Awarded/Cancelled). Bid lifecycle (Draft → Submitted → Opened → Evaluated → Shortlisted → Won/Lost). Two-envelope opening supported. Evaluation and Committee decision flows.

# API Contract

REST endpoints covering Authentication, Procurement, Supplier, Evaluation, Committee, Award, Contract, and Admin operations. Standard Problem Details for error responses.

# Notifications

Matrix defines event triggers, recipients, channels, and timing (RFx publish, tender close reminder, Q&A, bid submission, committee decision, award).

# Seed Data

Initial roles (Admin, Procurement, Supplier, Committee), currencies (QAR, USD, EUR), UOMs (EA, KG, M, L), categories (Construction, IT Equipment, Services).

# Reports & Analytics

KPIs include savings vs estimate, competition ratio, cycle time, supplier win rate, price dispersion, supplier KPIs. Useful for dashboards and decision-making.