

Analysis Document: Intelligent Vendor on boarding Challenge

1. Testing Approach & Strategy

Approach

The testing approach is Risk-Based, prioritizing core, high-impact workflows due to the constrained one-day timeline (Hackathon environment). The focus is on the end-to-end vendor on boarding flow, the Procurement Dashboard's accuracy, and the automated Follow-up Management system.

Strategy

Test Type	Focus Area	Priority
Functional Testing	UI forms (wizard, validation), Core Workflow (Request → OTP → Form → Validation), File Upload & Parsing, Follow-up Triggers.	High (Ensures core requirements are met)
Integration Testing	Email service/link correctness, OTP verification, File Parsing API vs. Form Data, Dashboard metrics accuracy.	High (Ensures seamless data flow)
Non-Functional Testing	Usability (Step-by-step wizard, mobile optimization), Security (OTP, data protection), Performance (load times).	Medium/Low (Prioritize usability and core security over full-scale performance/accessibility)

2. Scope & Out-of-Scope

In-Scope

- Vendor on boarding Flow: Complete cycle from Procurement Request --> Email Invitation --> OTP Login --> Form Submission (4 sections) --> Procurement Dashboard update.
- Data & Validation: All field validations across the four form sections (Business, Contact, Banking, and Compliance).
- File Upload & Parsing: Acceptance of required PDF files and validation of extracted data against manually entered details.
- Dashboard Functionalities: Accurate status tracking (7 states) , Filters/Search , Metrics/Insights , Activity Log , and Export option
- Follow-up Workflows: Automated triggers for missing/incorrect data and delayed response ; manual follow-up initiation
- Security & Authentication: Email-based OTP login for vendors

Out-of-Scope (To be excluded or minimized)

- Full-scale, dedicated Performance and Load Testing.
- Multi-language or advanced localization support.
- Advanced AI Guardrails beyond basic content/accuracy checks for LLM-generated follow-ups.
- Complex, production-ready system integrations (focus on mock/simple API integration)

3. End-to-End Test Scenarios

1. Successful on boarding: Procurement requests → Vendor logs in via OTP --> Vendor fills all fields correctly (including matching file uploads) --> Submits --> Dashboard shows Waiting for validation
2. Automated Follow-up (Missing Data): Vendor submits with a mandatory field missing --> System auto-triggers Missing data follow-up --> Vendor updates form --> Status changes to Waiting for validation
3. Automated Follow-up (Incorrect File): Vendor submits details but the uploaded document data mismatches the entered fields --> System auto-triggers incorrect file follow-up.
4. Delayed Response: Vendor receives invitation link but takes longer than a defined period to respond --> System auto-triggers Delayed response follow-up
5. Manual Follow-up: Procurement team manually initiates a follow-up for clarification --> Communication is tracked in the Vendor Activity Log
6. Denial Workflow: Vendor application is reviewed and Denied by procurement --> Dashboard reflects Denied status --> appropriate notification is sent
7. Delete Functionality: Test both Soft Delete (vendor record temporarily disabled) and Hard Delete (permanent removal) to verify dashboard display and export functionality

4. Requirement Clarification Questions

- To proceed with detailed test case design, the following requirements need clarification:
- OTP Expiry: What is the specific time limit (e.g., 5 minutes) for the vendor to use the Email-based OTP?
- File Size Limit: What is the maximum acceptable file size (e.g., 10MB) for PDF uploads in each of the four sections?
- File Mismatch Error: What is the expected user-facing error message or system action when data in the uploaded PDF does not match the form data?
- Follow-up SLA: What is the defined time period after which a response is considered "Delayed" and triggers an auto-follow-up?

- Multi-Vendor Request: Should the Vendor Details Request Form support capturing details for multiple vendors in a single submission, or is it strictly one vendor per request?

5. Risk Analysis, Assumptions, and Constraints

Risks

Risk	Impact	Mitigation Strategy
R1: File Parsing Errors (The most complex validation point)	Core validation fails, leading to incorrect status and follow-ups.	Prioritize testing the parsing logic with various valid/invalid sample documents. Use AI tools to generate robust validation code.
R2: OTP Authentication Failure	Vendors cannot access the form, halting the entire workflow.	Thorough integration testing on the email/OTP delivery and expiry logic.
R3: Insufficient Time (One-day timeline)	Incomplete testing, failure to meet all functional requirements.	Strict adherence to prioritization (Section 12), focus on core functional flows

Assumptions

- Sample Data: Valid sample PDF documents are available and consistent with the required fields for testing the parsing functionality.
- Environment: A stable internet connection and a working, deployed application environment will be provided for the demo.

Constraints

- Time: Maximum one day for development and testing. This limits exhaustive non-functional testing and complex automation.
- Evaluation Focus: Heavy weighting (50%) on Vibe Coding Excellence necessitates proving the value and acceleration provided by AI tools, making the use of Co-pilot/Cursor non-negotiable

6. High-Impact Areas to Prioritize & Defect Prone Prediction

High-Impact Areas (Prioritized for Testing)

OTP Authentication Flow: As the gatekeeper to the form, any failure here is a showstopper.

File Upload & Parsing Validation: This is the most complex functional requirement involving AI/parsing logic and document data matching the form input.

Dashboard Status Updates: The central source of truth for the procurement team; status changes must be immediate and accurate.

Automated Follow-up Triggers: The 'Intelligent' component of the solution; testing the correct trigger logic for all four issue types (missing data, incorrect data, incorrect file, delayed response)

Defect-Prone Prediction Areas

File Parsing Logic: Parsing document data is inherently error-prone, especially with variations in document formats.

OTP Expiry and Retry Handling: Timing issues or incorrect handling of expired/invalid OTPs.

Boundary Value Checks: Specifically, fields like Year Established (1800 boundary) and Account Number (8 to 18 digits).

Dashboard Filters and Export: Complex data manipulation and external file generation often introduce bugs.