## **Project Plan: Fae Intelligence Modular Application Development**

**Objective:** Develop and deploy the core modular AI application services (CAPA Generation, Document Review, Audit Risk Scan) with robust customization, secure data handling, and a built-in testing and scoring framework.

**Timeline:** Estimated 3-6 Months (for initial core modules + framework)

**Approach:** Agile & Modular Development, focusing on Minimum Viable Product (MVP) for core services first, then iterating and adding features/modules.

**Phases & Sprints (Illustrative - actual sprints would be defined iteratively):**

**Phase 1: Foundation & Core Architecture (Est. 4-6 Weeks)**

* **Sprint 1: Architecture Design & Setup (Est. 2 Weeks)**
  + **Task:** Define overall system architecture (Hybrid: local pre-processing + cloud AI).
  + **Task:** Select core technologies (Programming language, AI model APIs - e.g., Gemini, Claude, database, cloud platform).
  + **Task:** Design the secure data handling pipeline (local scrubbing, encryption, temporary storage, rapid deletion).
  + **Task:** Set up development environment and version control.
  + **Task:** Design the modular script/tool framework (how new modules are added).
* **Sprint 2: Secure Data Ingestion & Pre-processing (Est. 2 Weeks)**
  + **Task:** Develop secure file upload mechanism.
  + **Task:** Implement local document parsing and text extraction (PDF, DOCX, etc.).
  + **Task:** Develop data scrubbing/anonymization logic based on security requirements.
  + **Task:** Implement secure temporary storage.

**Phase 2: Core Module Development (Est. 6-10 Weeks)**

* **Sprint 3: CAPA Generation Module (Est. 2-3 Weeks)**
  + **Task:** Design prompt structure for CAPA generation, incorporating company inputs and output settings.
  + **Task:** Develop initial AI script/logic for generating CAPA drafts (root cause, actions, etc.).
  + **Task:** Implement input handling for CAPA-specific details (non-conformance description, etc.).
  + **Task:** Implement output formatting for CAPA drafts.
* **Sprint 4: Document Review Module (Est. 2-3 Weeks)**
  + **Task:** Design prompt structure for document review, incorporating company inputs and regulatory context.
  + **Task:** Develop initial AI script/logic for identifying inconsistencies, outdated references, and gaps.
  + **Task:** Implement input handling for document review specifics (document type, regulations).
  + **Task:** Implement output formatting for review reports (annotations, suggestions).
* **Sprint 5: Audit Risk Scan Module (Est. 2-4 Weeks)**
  + **Task:** Design prompt structure for batch analysis and risk identification.
  + **Task:** Develop initial AI script/logic for scanning documents against standards and identifying risk areas.
  + **Task:** Implement input handling for audit scan specifics (standards, subsystems).
  + **Task:** Implement output formatting for risk reports (prioritization, recommendations).

**Phase 3: Customization & Output Refinement (Est. 4-6 Weeks)**

* **Sprint 6: Company-Specific Inputs Implementation (Est. 2-3 Weeks)**
  + **Task:** Develop backend logic to store and manage company-specific configuration (equipment, regulations, etc.).
  + **Task:** Integrate company inputs into the dynamic prompt generation for all core modules.
  + **Task:** Develop user interface elements (forms, fields) for inputting and managing company details (this interfaces with the website front-end, but the logic is backend).
* **Sprint 7: Adjustable Output Settings (Sliders) (Est. 2-3 Weeks)**
  + **Task:** Develop backend logic to handle adjustable output settings (technical depth, readability, etc.).
  + **Task:** Integrate these settings into the dynamic prompt generation.
  + **Task:** Develop user interface elements (sliders, dropdowns) for adjusting output settings (backend logic).

**Phase 4: Testing & Scoring Framework (Est. 4-6 Weeks)**

* **Sprint 8: Automated Evaluation Pipeline (Est. 2-3 Weeks)**
  + **Task:** Build the core testing pipeline infrastructure.
  + **Task:** Implement rule-based compliance checks for core module outputs.
  + **Task:** Integrate LLM-based evaluation (rubric design, prompt for evaluation model).
  + **Task:** Implement cross-model consistency checks.
  + **Task:** Define and implement quantitative scoring metrics.
* **Sprint 9: Customer-Facing Scorecards & Reporting (Est. 2-3 Weeks)**
  + **Task:** Design the data structure for storing test results and scores.
  + **Task:** Develop backend API for retrieving scoring data.
  + **Task:** Develop logic for benchmarking against internal or industry data (requires data collection/definition).
  + **Task:** Design and develop user interface for displaying scorecards and reports (interfaces with website front-end).

**Phase 5: Deployment & Iteration (Ongoing)**

* **Sprint 10: Secure Deployment & Infrastructure (Est. 2 Weeks)**
  + **Task:** Set up production environment on cloud platform (consider scalability and compliance needs).
  + **Task:** Implement robust logging and monitoring.
  + **Task:** Deploy core application modules and framework.
* **Sprint 11+: User Acceptance Testing (UAT) & Feedback (Est. 2+ Weeks)**
  + **Task:** Conduct UAT with pilot users/clients.
  + **Task:** Gather feedback on usability, accuracy, and performance.
  + **Task:** Prioritize bug fixes and enhancements based on feedback.
* **Sprint 12+: Refinement & New Module Development (Ongoing)**
  + **Task:** Refine existing AI scripts and logic based on UAT and testing results.
  + **Task:** Implement automated retraining loops (Phase 3 of the testing framework roadmap).
  + **Task:** Begin development of "Advanced Quality Tools" and "Coming Soon" modules based on market demand and feedback.
  + **Task:** Continuously monitor security and compliance.

**Key Considerations:**

* **AI Model Selection & Costs:** Continuously evaluate AI model performance and cost-effectiveness.
* **Data Security & Compliance:** This is paramount. Ensure all data handling meets regulatory requirements from day one.
* **Prompt Engineering:** This is the core "secret sauce." Requires deep domain expertise and iterative refinement.
* **Scalability:** Design the architecture to handle increasing numbers of users and document volumes.
* **User Experience (UX):** The interface for inputting company details and adjusting settings needs to be intuitive, even though the logic is complex.
* **Human-in-the-Loop:** Plan how optional human review will integrate into the workflow and pricing model.
* **Benchmarking Data:** Acquiring or defining relevant industry benchmarking data for the scoring framework will be necessary.