

Team Collaboration & Working Guide

This document provides a complete architecture and working guide for teams developing an product consisting of frontend, backend, AI engine, WhatsApp integration, Google Drive integration, SQL database, LLM, MCP, and DevOps.

1. Project Overview

This product includes:

- Frontend (React / Web / Mobile)
- Backend API (Node / Python)
- WhatsApp Integration
- Google Drive Integration
- SQL Database
- ERP
- AI Engine (LLM, MCP, Embeddings, Vector DB)
- DevOps (CI/CD, Docker, Kubernetes)
- Single Configuration Folder (MVC Style)

Project Structure:

/ product/

| — config/

| — backend/

| — frontend/

| — database/

| — devops/

| — docs/

2. Team Roles & Responsibilities

A. Frontend Team

- Builds UI, pages, components, dashboards.
- Integrates APIs.
- Works in /frontend/src.

B. Backend API Team

- Creates REST APIs, modules, routes, authentication.
- Handles WhatsApp, Drive, business logic.
- Works in /backend/api.

C. AI/ML Team

- Works on OCR, NLP, classification, LLM pipelines.
- Builds MCP tools.
- Works in /backend/ai-engine.

D. Integration Team

- WhatsApp bot, Drive upload, Email/SMS services, ERP.
- Works in /backend/integrations.

E. Database Team

- Schema, migrations, indexing, optimization.
- Works in /database.

F. DevOps Team

- CI/CD, Docker, K8s, monitoring.
- Works in /devops.

3. Development Flow

Backlog → Development → Testing → Review → UAT → Production

Main branches:

main → Production

develop → Active development

staging → Pre-production

Feature branches:

feature/frontend-*

feature/backend-*

feature/ai-*

feature/integration-*

feature/db-*

feature/devops-*

4. Folder Ownership

| Folder | Owned By | Description |
|--------|----------|-------------|
|--------|----------|-------------|

| | | |
|-----------------------|------------------|-----------------------|
| /frontend | Frontend Team | UI & components |
| /backend/api | Backend Team | APIs & logic |
| /backend/ai-engine | AI Team | AI models & pipelines |
| /backend/integrations | Integration Team | WhatsApp/Drive APIs |
| /database | DB team | Schema, migrations |
| /devops | DevOps | Deployments, CI/CD |
| /config | All Teams | Central configuration |

5. Configuration Handling (MVC Style)

All configuration stored in /config:

- Database config
- AI/LLM config
- Integrations config
- App settings
- MCP tools

6. Team Interaction Flow

Frontend ↔ Backend → JSON APIs

Backend ↔ AI Engine → Function calls

Backend ↔ Database → ORM/SQL queries

Backend ↔ Integrations → Unified services

AI Engine ↔ LLM Providers → Config-driven

Drive Upload → Standardized upload function

7. Testing Process

Frontend: Component Testing, UI Testing

Backend: Unit Tests, API Tests

AI: Model accuracy, inference tests

Integrations: Sandbox testing

DB: Migration testing

DevOps: Load testing, monitoring

8. Deployment Flow

1. Merge to develop
2. CI pipeline runs
3. Deploy to staging
4. QA approves
5. Deploy to production
6. Monitor & log errors

9. New Developer Onboarding

1. Clone repo
2. Copy .env.example → .env

3. Install dependencies
4. Run backend & frontend
5. Read documentation in /docs
6. Select Jira task
7. Create feature branch
8. Start development