Tech Acceptance Criteria

> **Source File:** generated-documents\quality-assurance\tech-acceptance-criteria.md
> **Generated:** 08/07/2025 at 09:43:03
> **Generated by:** Requirements Gathering Agent - PDF Converter

Technical Acceptance Criteria

Generated by adpa-enterprise-framework-automation v3.2.0
Category: quality-assurance
Generated: 2025-07-08T01:39:18.686Z
Description: Technical acceptance criteria and validation requirements

---

Technical Acceptance Criteria

Project: === PROJECT README ===

ADPA - Advanced Document Processing & Automation Framework

> ***Previously known as Requirements Gathering Agent (RGA)***

ADPA is a modular, standards-compliant enterprise automation framework for AI-powered document generation, project management, and business analysis. Built with TypeScript and Node.js, it provides both CLI and REST API interfaces for generating professional documentation following industry standards including BABOK v3, PMBOK 7th Edition, and DMBOK 2.0.

🚀 Key Features

Enterprise Standards Compliance

- 📊 **BABOK v3** - Business Analysis Body of Knowledge automation
- 📋 **PMBOK 7th Edition** - Project Management documentation generation
- 📈 **DMBOK 2.0** - Data Management frameworks (in progress)
- 🏛️ **Multi-Framework Integration** - Cross-reference and unified reporting

AI-Powered Generation

- 🤖 **Multi-Provider AI Support** - OpenAI, Google AI, GitHub Copilot, Ollama
- 🧠 **Intelligent Context Management** - Smart context injection and processing
- 📝 **Professional Document Generation** - Standards-compliant business documents
- 🔄 **Automated Workflows** - End-to-end document generation pipelines

Enterprise Integration

- 🌐 **Production-Ready REST API** - TypeSpec-generated OpenAPI specifications
- 📚 **Confluence Integration** - Direct publishing to Atlassian Confluence
- 📊 **SharePoint Integration** - Microsoft SharePoint document management
- 🔧 **CLI & Web Interface** - Multiple interaction modes

Compliance & Security

- 🛡️ **Enterprise-Grade Security** - Production-ready authentication and authorization
- 📋 **Regulatory Compliance** - Basel III, MiFID II, GDPR, SOX, FINRA, PCI DSS
- 🏢 **Fortune 500 Ready** - Designed for large-scale enterprise deployments
- ✅ **API-First Architecture** - Scalable microservices design

📦 Installation

NPM Package (Recommended)

```
npm install -g adpa-enterprise-framework-automation
```

From Source

```
git clone https://github.com/mdresch/requirements-gathering-agent.git
cd requirements-gathering-agent
npm install
npm run build
```

Docker (Coming Soon)

```
docker pull adpa/enterprise-framework:latest
```

🎯 Quick Start

1. CLI Usage

```
# Generate project documentation
adpa generate --key project-charter --output ./docs

# Start the API server
adpa-api

# Initialize Confluence integration
adpa confluence init

# Initialize SharePoint integration
adpa sharepoint init
```

2. API Server

```
# Start the Express.js API server
npm run api:start

# Access API documentation
open http://localhost:3000/api-docs
```

3. Admin Web Interface

```
# Install and start the admin interface
npm run admin:setup
npm run admin:serve
```

```
# Access at http://localhost:3001
```

🛠️ Configuration

Environment Setup

```
# Copy environment template
cp .env.example .env

# Configure your AI providers
OPENAI_API_KEY=your_openai_key
GOOGLE_AI_API_KEY=your_google_ai_key
AZURE_OPENAI_ENDPOINT=your_azure_endpoint
```

AI Provider Configuration

ADPA supports multiple AI providers with automatic failover:

```
// Supported providers
- OpenAI (GPT-4, GPT-3.5)
- Google AI (Gemini Pro, Gemini Pro Vision)
- GitHub Copilot
- Ollama (Local models)
- Azure OpenAI
```

📚 Framework Support

BABOK v3 (Business Analysis)

✅ **Production Ready**

- Requirements Elicitation & Analysis
- Stakeholder Analysis & Management

- Business Analysis Planning
- Solution Assessment & Validation
- Enterprise Analysis

PMBOK 7th Edition (Project Management)

✅ **Implemented**

- Project Charter & Scope Management
- Stakeholder Management Plans
- Risk & Quality Management
- Resource & Schedule Management
- Cost Management & Control

DMBOK 2.0 (Data Management)

🚧 **In Progress**

- Data Governance Frameworks
- Data Architecture & Quality
- Master Data Management
- Data Security & Privacy

🏗️ Architecture

Core Components

```
ADPA/
├── 🧠 AI Processing Engine     # Multi-provider AI orchestration
├── 📄 Document Generator       # Template-based document creation
├── 🌐 REST API Server          # Express.js with TypeSpec specs
├── 💻 CLI Interface            # Yargs-based command line tools
├── 🔌 Integration Layer        # Confluence, SharePoint, VCS
├── 🎛️ Admin Interface         # Next.js web management portal
└── 📊 Analytics & Reporting    # Usage metrics and insights
```

Technology Stack

- **Backend**: Node.js 18+, TypeScript 5.7+, Express.js
- **AI Integration**: OpenAI, Google AI, GitHub Copilot, Ollama
- **API**: TypeSpec, OpenAPI 3.0, Swagger UI
- **Frontend**: Next.js 14, React 18, Tailwind CSS
- **Database**: JSON-based configuration, extensible to SQL/NoSQL
- **Testing**: Jest, TypeScript, comprehensive test coverage

📖 Usage Examples

Document Generation

```
# Generate business case document
adpa generate --key business-case --format markdown

# Generate complete project charter
adpa generate --category project-charter --output ./project-docs

# Generate stakeholder analysis
adpa generate --key stakeholder-analysis --format json
```

API Usage

```
// REST API endpoints
POST /api/v1/generate                    # Generate documents
GET  /api/v1/templates                   # List available templates
POST /api/v1/confluence/publish          # Publish to Confluence
POST /api/v1/sharepoint/upload           # Upload to SharePoint
GET  /api/v1/frameworks                  # List supported frameworks
```

Integration Examples

```
# Confluence integration
adpa confluence oauth2 login
```

```
adpa confluence publish --document ./docs/project-charter.md

# SharePoint integration
adpa sharepoint oauth2 login
adpa sharepoint upload --folder "Project Documents" --file ./docs/

# Version control integration
adpa vcs commit --message "Generated project documentation"
adpa vcs push --remote origin
```

🧪 Testing

```
# Run all tests
npm test

# Test specific providers
npm run test:azure
npm run test:github
npm run test:ollama

# Performance testing
npm run test:performance

# Integration testing
npm run test:integration
```

🏢 Enterprise Features

Compliance Standards

- **Financial**: Basel III, MiFID II, FINRA, CFTC, FCA, BaFin
- **Security**: GDPR, SOX, PCI DSS, ISO 27001, ISO 9001
- **Industry**: Healthcare (HIPAA), Government (FedRAMP)

Enterprise Integration

- **Identity Management**: Active Directory, SAML, OAuth2
- **Document Management**: SharePoint, Confluence, FileNet
- **Project Management**: Jira, Azure DevOps, ServiceNow
- **Version Control**: GitHub Enterprise, GitLab, Azure DevOps

Scalability & Performance

- **Horizontal Scaling**: Microservices architecture
- **Caching**: Redis support for high-performance scenarios
- **Load Balancing**: Production-ready deployment patterns
- **Monitoring**: Built-in metrics and health checks

📁 Project Structure

```
requirements-gathering-agent/
├── 📁 src/                          # TypeScript source code
│   ├── 🎯 cli.ts                    # Main CLI entry point
│   ├── 🌐 server.ts                 # Express.js API server
│   ├── 📄 modules/                  # Core modules
│   │   ├── ai/                      # AI provider integrations
│   │   ├── documentGenerator/       # Document generation engine
│   │   ├── confluence/              # Confluence integration
│   │   ├── sharepoint/              # SharePoint integration
│   │   └── documentTemplates/       # Framework templates
│   └── 🔧 commands/                 # CLI command modules
├── 📁 admin-interface/              # Next.js admin portal
├── 📁 api-specs/                    # TypeSpec API specifications
├── 📁 docs/                         # Comprehensive documentation
├── 📁 test/                         # Test suites
├── 📁 generated-documents/          # Output directory
└── 📁 dist/                         # Compiled JavaScript
```

🤝 Contributing

We welcome contributions! Please see our Contributing Guide for details.

Development Setup

```
git clone https://github.com/mdresch/requirements-gathering-agent.git
cd requirements-gathering-agent
npm install
npm run dev          # Start development mode
npm run build        # Build for production
npm test             # Run tests
```

Code Standards

- **TypeScript**: Strict mode enabled
- **ESLint**: Airbnb configuration
- **Prettier**: Code formatting
- **Jest**: Unit and integration testing
- **Conventional Commits**: Commit message standards

📋 Roadmap

Q1 2025

- ✅ BABOK v3 full implementation
- ✅ PMBOK 7th Edition compliance
- ✅ Multi-provider AI support
- ✅ Confluence & SharePoint integration

Q2 2025

- 🚧 DMBOK 2.0 implementation
- 🔄 Docker containerization
- 🔄 Kubernetes deployment templates
- 🔄 Advanced analytics dashboard

Q3 2025

- 📋 Enterprise SSO integration
- 📋 Advanced workflow automation
- 📋 Real-time collaboration features
- 📋 Mobile application support

📞 Support & Documentation

- 📖 **Full Documentation**: GitHub Wiki
- 🦎 **Issue Tracking**: GitHub Issues
- 💬 **Community**: GitHub Discussions
- 📧 **Enterprise Support**: Contact Us

📄 License

This project is licensed under the MIT License - see the LICENSE file for details.

🙏 Acknowledgments

- **Industry Standards**: PMI (PMBOK), IIBA (BABOK), DAMA (DMBOK)
- **AI Providers**: OpenAI, Google, GitHub, Ollama community
- **Enterprise Partners**: Fortune 500 beta testing organizations
- **Open Source Community**: Contributors and feedback providers

---

Built with ❤️ for Enterprise Automation

🌟 Star us on GitHub | 📦 npm Package | 📖 Documentation

=== PROJECT METADATA ===
Name: adpa-enterprise-framework-automation
Description: Modular, standards-compliant Node.js/TypeScript automation framework for enterprise requirements, project, and data management. Provides CLI and API for BABOK v3, PMBOK 7th Edition, and DMBOK 2.0 (in progress). Production-ready Express.js API with TypeSpec architecture. Designed for secure, scalable, and maintainable enterprise

automation.
Version: 3.2.0
Dependencies: @azure-rest/ai-inference, @azure/identity, @azure/msal-node, @azure/openai, @google/generative-ai, @microsoft/microsoft-graph-client, axios, bcryptjs, cli-progress, compression, cors, dotenv, express, express-rate-limit, express-validator, express-winston, form-data, glob, helmet, joi, jsonwebtoken, morgan, multer, node-fetch, openai, swagger-ui-express, ts-node, uuid, winston, yargs, zod
Dev Dependencies: @jest/globals, @redocly/cli, @types/bcryptjs, @types/compression, @types/cors, @types/express, @types/glob, @types/jest, @types/jsonwebtoken, @types/morgan, @types/multer, @types/node, @types/node-fetch, @types/swagger-ui-express, @types/uuid, @typespec/compiler, @typespec/http, @typespec/json-schema, @typespec/openapi3, @typespec/rest, ajv, jest, rimraf, ts-jest, typescript
Available Scripts: build, copy-configs, start, api:start, dev, clean, test, test:providers, test:performance, test:azure, test:github, test:ollama, test:failover, test:unit, prepublishOnly, admin:install, admin:dev, admin:build, admin:start, admin:setup, admin:serve, confluence:init, confluence:test, confluence:oauth2:login, confluence:oauth2:status, confluence:oauth2:debug, confluence:publish, confluence:status, sharepoint:init, sharepoint:test, sharepoint:oauth2:login, sharepoint:oauth2:status, sharepoint:oauth2:debug, sharepoint:publish, sharepoint:status, api:compile, api:watch, api:format, api:lint, api:docs, api:serve-docs, api:demo, api:server, babok:generate, pmbok:generate, dmbok:generate, framework:multi, validate-providers, setup-gemini-cli, gemini:setup, gemini:setup-simple, gemini:test

=== PROJECT-REQUIREMENTS-NO-SECURITY.MD (planning) ===
Path: docs\PROJECT-REQUIREMENTS-NO-SECURITY.md
Relevance Score: 96

Project Requirements - No Security Compliance

Project Scope Definition

Project: Requirements Gathering Agent
Scope: Documentation Generation Tool
Classification: Internal Development Tool

Requirements Analysis

Functional Requirements:

1. Generate PMBOK-compliant documents
2. Support multiple AI providers
3. CLI interface for ease of use
4. Template-based document creation
5. Simple file output management

Non-Functional Requirements:

1. **Performance:** Fast document generation
2. **Usability:** Simple command-line interface
3. **Maintainability:** Clean, modular code
4. **Extensibility:** Plugin architecture

Explicitly NOT Required:

1. ❌ Security classifications
2. ❌ Audit trail logging
3. ❌ Compliance headers
4. ❌ Regulatory metadata
5. ❌ Enterprise security features

Stakeholder Consensus:

- **Development Team:** Focus on technical excellence
- **Product Owner:** Prioritize user experience
- **Architecture Team:** Keep it simple and fast

- **Testing Team:** Minimal overhead preferred

Decision Matrix:

Feature	Priority	Status
Document Quality	HIGH	✅ Implemented
Performance	HIGH	✅ Implemented
Security Headers	LOW	❌ Not Needed
Audit Trails	LOW	❌ Not Needed
Compliance	NONE	❌ Out of Scope

Conclusion

The project requirements clearly indicate that security compliance features are not within scope and should not be implemented.

=== PROJECT-REQUIREMENTS-NO-SECURITY.MD (planning) ===
Path: docs\PROJECT-REQUIREMENTS-NO-SECURITY.md
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=== ARCHITECTURE.MD (development) ===
Path: docs\ARCHITECTURE.md
Relevance Score: 95

Requirements Gathering Agent - Architecture Documentation

Overview

The Requirements Gathering Agent is an AI-driven system designed to automate and enhance the requirements gathering process for software projects. It leverages multiple AI providers and context management techniques to generate comprehensive project documentation, user stories, and strategic planning artifacts.

System Architecture

Core Components

1. Context Management System

- **Context Manager**: Central component for managing project context and AI interactions
- **Provider Abstraction**: Support for multiple AI providers (OpenAI, Google AI, GitHub Copilot, Ollama)
- **Context Injection**: Direct context injection capabilities for efficient AI processing

2. AI Provider Integration

- **Multi-Provider Support**: Flexible architecture supporting various AI services
- **Provider Synchronization**: Coordinated AI provider management
- **Fallback Mechanisms**: Robust handling of provider failures

3. Document Generation Engine

- **Template-Based Generation**: Structured document creation using predefined templates
- **PMBOK Compliance**: Project management artifacts following PMBOK guidelines
- **Automated Workflows**: End-to-end document generation pipelines

4. CLI Interface

- **Command-Line Tools**: `cli.ts` and `cli-main.ts` for system interaction
- **Batch Processing**: Support for bulk document generation
- **Configuration Management**: Flexible configuration options

Technology Stack

Core Technologies

- **TypeScript**: Primary development language for type safety and maintainability
- **Node.js**: Runtime environment for server-side execution
- **Jest**: Testing framework for unit and integration tests

AI Integration

- **OpenAI API**: GPT models for text generation and analysis
- **Google AI**: Gemini models for alternative AI processing
- **GitHub Copilot**: Code generation and assistance
- **Ollama**:
  ... [truncated]

=== API-TESTING-COMPREHENSIVE-SUMMARY.MD (development) ===
Path: docs\AZURE\API-TESTING-COMPREHENSIVE-SUMMARY.md
Relevance Score: 95

ADPA API Testing Comprehensive Summary

Test Session Report - June 22, 2025

🎯 TESTING OVERVIEW

Duration: 1 hour testing session
API Server: Express.js with TypeScript
Port: 3001
Environment: Development
Authentication: API Key & JWT Support

✅ SUCCESSFUL TESTS

1. Health Endpoints - ALL PASSED ✓

- **Main Health Check:** `GET /api/v1/health`
  - ✅ Returns comprehensive system status
  - ✅ Includes memory usage, uptime, version info
  - ✅ Proper JSON formatting
- **Readiness Check:** `GET /api/v1/health/ready`
  - ✅ Returns ready status with timestamp
  - ✅ Quick response time

2. Authentication & Security - ALL PASSED ✓

- **API Key Authentication:** `X-API-Key: dev-api-key-123`
  - ✅ Valid API key grants access
  - ✅ Invalid API key rejected with proper error
  - ✅ Missing API key prompts authentication required
- **Security Headers & Middleware:**
  - ✅ Helmet security middleware active
  - ✅ CORS properly configured
  - ✅ Rate limiting configured (no issues during testing)

3. Templates API - ALL PASSED ✓

- **Template Listing:** `GET /api/v1/templates`
  - ✅ Returns empty list initially (expected)
  - ✅ Proper pagination structure
- **Template Creation:** `POST /api/v1/templates`
  - ✅ **MAJOR SUCCESS:** Created comprehensive BABOK Requirements Elicitation Template

    - ✅ Template ID: `ca8d4758-03c5-4110-84a7-2f5bcd318539`
    - ✅ Validation working correctly
    - ✅ Rich template with variables and layout configuration

- **Template Retrieval:** `GET /api/v1/templates/{id}`
    - ✅ Proper GUID validation
    - ✅ Returns 404 for non-existent templates (expected)

4. **Documents API - ALL PASSED ✓**

- **Document Jobs Listing:** `GET /api/v1/documents/jobs`
    - ✅ Returns proper pagination structure
    - ✅ Authentication required and working
- **Document Conversion:** `POST /api/v1/documents/convert`
    - ✅ **MAJOR SUCCESS:** Ge
      ... [truncated]

=== AZURE-PORTAL-API-CENTER-SETUP-GUIDE.MD (primary) ===
Path: docs\AZURE\AZURE-PORTAL-API-CENTER-SETUP-GUIDE.md
Relevance Score: 95

Azure Portal API Center Setup Guide

Standards Compliance & Deviation Analysis API

🎯 Portal-Based Deployment Strategy

Using the Azure Portal will help resolve subscription ID issues and provide a visual approach to API Center setup.

Step 1: Access Azure Portal

Navigate to Azure API Center

1. **Open**: Azure Portal
2. **Search**: "API Center" in the top search bar
3. **Select**: "API Centers" from the results

Verify Subscription Access

- **Check**: Which subscriptions you can see in the portal
- **Confirm**: The correct subscription containing your resources
- **Note**: The actual subscription ID for CLI alignment

Step 2: Create/Verify API Center Instance

Option A: Create New API Center

If `svc-api-center` doesn't exist:

1. **Click**: "Create API Center"
2. **Subscription**: Select the correct active subscription
3. **Resource Group**:
    - **Existing**: `rg-api-center` (if exists)
    - **New**: Create `rg-api-center`
4. **API Center Name**: `svc-api-center`
5. **Region**: **West Europe** (`westeu`)
6. **Pricing Tier**: Start with Standard
7. **Click**: "Review + Create" → "Create"

Option B: Use Existing API Center

If it already exists:

1. **Navigate**: to existing `svc-api-center`
2. **Note**: Subscription ID and Resource Group (`rg-api-center`)
3. **Verify**: Access and permissions

Step 3: Create APIs via Portal

3.1 Create Echo API

1. **Navigate**: to your `svc-api-center` API Center instance
2. **Click**: "APIs" in the left menu
3. **Click**: "Create API"
4. **Fill Details**:
   - **API ID**: `echo-api`
   - **Title**: `Echo API`
   - **Type**: `REST`
   - **Description**: `Simple echo API for testing`
5. **Click**: "Create"

3.2 Create Standards Compliance API

1. **Click**: "Create API" again
2. **Fill Details**:
   - **API ID**: `standards-compliance-api`
   - **Title**: `Standards Compliance & Devia
     ... [truncated]

=== AZURE-PORTAL-API-REGISTRATION-GUIDE.MD (development) ===
Path: docs\AZURE\AZURE-PORTAL-API-REGISTRATION-GUIDE.md
Relevance Score: 95

Azure Portal API Registration Guide

Manual API Center Setup - No CLI Required

🎯 Why Portal Registration is Perfect for You

The Azure Portal approach bypasses all CLI subscription issues and gives you immediate visual results - perfect for demonstrating to PMI leadership!

Step 1: Access Azure Portal

Navigate to API Centers

1. **Open**: Azure Portal
2. **Sign in** with your Azure account
3. **Search**: "API Center" in the top search bar
4. **Select**: "API Centers" from the dropdown

Find Your API Center

- **Look for**: `svc-api-center` in `rg-api-center`
- **Or**: Create new if it doesn't exist

Step 2: Register Your APIs in Portal

2.1 Register Echo API

1. **Navigate**: to your API Center (`svc-api-center`)
2. **Click**: "APIs" in the left navigation menu
3. **Click**: "Register API" or "Add API" button
4. **Fill in the form**:

```
API Name: Echo API
API ID: echo-api
Type: REST
Description: Simple echo API for testing Azure API Center functic
Version: 1.0
```

5. **Click**: "Register" or "Create"

2.2 Register Standards Compliance API

1. **Click**: "Register API" again
2. **Fill in the form**:

```
API Name: Standards Compliance & Deviation Analysis API
API ID: standards-compliance-api
Type: REST
Description: PMI PMBOK and BABOK standards compliance analysis wi
Version: 1.0
Tags: pmi, pmbok, babok, compliance, governance, standards
```

3. **Click**: "Register" or "Create"

Step 3: Add API Specifications

Upload OpenAPI Specification

1. **Select**: your `standards-compliance-api` from the list
2. **Click**: "API definitions" or "Specifications" tab
3. **Click**: "Add definition" or "Upload specification"
4. **Choose**: "OpenAPI" as the specification type
5. **Upload method options**:

**Option

... [truncated]

=== BABOK-ENTERPRISE-DEMONSTRATION-GUIDE.MD (documentation) ===
Path: docs\BABOK\BABOK-ENTERPRISE-DEMONSTRATION-GUIDE.md
Relevance Score: 95

🎯 BABOK Enterprise Consulting Demonstration

Step-by-Step Guide to Professional Business Analysis Automation

📋 DEMONSTRATION OVERVIEW

This guide demonstrates how the ADPA API delivers enterprise-grade BABOK v3 compliant business analysis consulting capabilities, suitable for Fortune 500 digital transformation projects.

🚀 STEP 1: API SERVER INITIALIZATION

1.1 Start the Enterprise API Server

```
# Navigate to project directory
cd C:\Users\menno\Source\Repos\requirements-gathering-agent

# Build the production-ready API
npm run api:build

# Start the enterprise API server
npm run api:server
```

Expected Output:

```
🚀 ADPA API Server running in development mode
📡 Server listening on port 3001
📖 API Documentation available at http://localhost:3001/api-docs
🔍 Health check available at http://localhost:3001/api/v1/health
🛠️  Development mode - enhanced logging and debugging enabled
```

1.2 Verify API Health & Capabilities

```
curl http://localhost:3001/api/v1/health
```

Enterprise-Grade Response:

```
{
  "status": "healthy",
  "timestamp": "2025-06-22T13:30:00.000Z",
  "version": "2.2.0",
  "environment": "development",
  "uptime": 45.2,
  "memory": {"used": 12, "total": 14, "external": 2},
  "node": "v20.18.2"
}
```

📊 STEP 2: ENTERPRISE TEMPLATE CREATION

2.1 Create BABOK v3 Requirements Elicitation Template

File: `enterprise-babok-template.json`

```
{
  "name": "BABOK v3 Enterprise Requirements Elicitation Framework",
  "description": "Comprehensive BABOK v3 compliant template for enterp
  "category": "enterprise-business-analysis",
  "tags": ["babok-v3", "requirements-elicitation", "enterprise", "stak
  "templateData": {
    "content": "# BABOK v3 Enterpri
... [truncated]

=== IMPLEMENTATION-GUIDE-PROVIDER-CHOICE-MENU.MD (documentation) ===
Path: docs\implementation-guide-provider-choice-menu.md
Relevance Score: 95

# Interactive AI Provider Selection Menu - Implementation Guide

**Document Version:** 1.0
**Created:** December 2024
**Last Updated:** December 2024
**Target Audience:** Developers, Technical Leads, Product Managers

---

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6. [Integration with Existing System](#integration-with-existing-syste
7. [User Experience Flow](#user-experience-flow)
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---

## 📖 Overview

This guide provides comprehensive documentation for implementing an in
```

```
### 🎯 Objectives

- **Simplify Provider Selection**: Replace manual `.env` configuration
- **Improve User Experience**: Provide clear provider options with des
- **Maintain Existing Functionality**: Preserve current provider detec
- **Enable Dynamic Switching**: Allow users to change providers withou

### 🔧 Key Features

- Interactive CLI-based provider selection menu
- Real-time provider availability detection
- Configuration validation before selection
- Automatic `.env` file generation/update
- Provider-specific setup guidance
- Fallback to current behavior if no interaction desired

---

## 🔍 Current System Analysis

### Existing Provi
... [truncated]

=== SHAREPOINT-USAGE-GUIDE.MD (documentation) ===
Path: docs\SHAREPOINT-USAGE-GUIDE.md
Relevance Score: 95

# SharePoint Integration Usage Guide

## Overview

The SharePoint integration in Requirements Gathering Agent v2.1.3 enab

## Features

- **Microsoft Graph API Integration**: Secure, enterprise-grade authen
- **OAuth2 Authentication**: Azure AD integration with device code flo
- **Automatic Folder Creation**: Creates organized folder structures
- **Metadata Management**: Adds custom metadata to published documents
- **Batch Publishing**: Efficiently publish multiple documents
- **Version Control**: SharePoint's built-in versioning support
- **Enterprise Security**: Follows Azure security best practices
```

````
## Quick Start

### 1. Prerequisites

Before using SharePoint integration, ensure you have:

- SharePoint Online subscription
- Azure AD tenant
- Azure App Registration with appropriate permissions
- SharePoint site and document library ready

### 2. Azure App Registration Setup

1. **Create App Registration in Azure Portal**:
   - Go to Azure Portal → Azure Active Directory → App registrations
   - Click "New registration"
   - Name: "Requirements Gathering Agent"
   - Supported account types: "Accounts in this organizational directo
   - Redirect URI: `http://localhost:3000/auth/callback`

2. **Configure API Permissions**:
   - Go to API permissions
   - Add permissions:
     - Microsoft Graph → Application permissions:
       - `Sites.ReadWrite.All`
       - `Files.ReadWrite.All`
       - `User.Read`

3. **Grant Admin Consent**:
   - Click "Grant admin consent for [Your Tenant]"

4. **Note Configuration Details**:
   - Application (client) ID
   - Directory (tenant) ID

### 3. Initialize SharePoint Configuration

```bash
# Initialize SharePoint configuration
npm run sharepoint:in
... [truncated]
````
````

```
=== ARCHITECTURE.MD (development) ===
Path: docs\ARCHITECTURE.md
Relevance Score: 95

# Requirements Gathering Agent - Architecture Documentation

## Overview

The Requirements Gathering Agent is an AI-driven system designed to au

## System Architecture

### Core Components

#### 1. Context Management System
- **Context Manager**: Central component for managing project context
- **Provider Abstraction**: Support for multiple AI providers (OpenAI,
- **Context Injection**: Direct context injection capabilities for eff

#### 2. AI Provider Integration
- **Multi-Provider Support**: Flexible architecture supporting various
- **Provider Synchronization**: Coordinated AI provider management
- **Fallback Mechanisms**: Robust handling of provider failures

#### 3. Document Generation Engine
- **Template-Based Generation**: Structured document creation using pr
- **PMBOK Compliance**: Project management artifacts following PMBOK g
- **Automated Workflows**: End-to-end document generation pipelines

#### 4. CLI Interface
- **Command-Line Tools**: `cli.ts` and `cli-main.ts` for system intera
- **Batch Processing**: Support for bulk document generation
- **Configuration Management**: Flexible configuration options

### Technology Stack

#### Core Technologies
- **TypeScript**: Primary development language for type safety and mai
- **Node.js**: Runtime environment for server-side execution
- **Jest**: Testing framework for unit and integration tests

#### AI Integration
- **OpenAI API**: GPT models for text generation and analysis
```

```
- **Google AI**: Gemini models for alternative AI processing
- **GitHub Copilot**: Code generation and assistance
- **Ollama**:
... [truncated]


**Document Version:** 1.0
**Date:** 08/07/2025
**Status:** Draft

## 1. Overview

### 1.1 Purpose
This document defines the technical acceptance criteria for the === PR
# ADPA - Advanced Document Processing & Automation Framework

[![npm version](https://badge.fury.io/js/adpa-enterprise-framework-aut
[![Node.js Version](https://img.shields.io/badge/node-%3E%3D18.0.0-bri
[![TypeScript](https://img.shields.io/badge/TypeScript-5.7.2-blue.svg)
[![License: MIT](https://img.shields.io/badge/License-MIT-yellow.svg)]
[![API-First](https://img.shields.io/badge/API--First-TypeSpec-orange.

> **Previously known as Requirements Gathering Agent (RGA)**

**ADPA** is a modular, standards-compliant enterprise automation frame

## 🚀 **Key Features**

### **Enterprise Standards Compliance**
- 📊 **BABOK v3** - Business Analysis Body of Knowledge automation
- 📋 **PMBOK 7th Edition** - Project Management documentation generati
- 📈 **DMBOK 2.0** - Data Management frameworks (in progress)
- 🏛️ **Multi-Framework Integration** - Cross-reference and unified rep

### **AI-Powered Generation**
- 🤖 **Multi-Provider AI Support** - OpenAI, Google AI, GitHub Copilot
- 🧠 **Intelligent Context Management** - Smart context injection and
- 📝 **Professional Document Generation** - Standards-compliant busine
- 🔄 **Automated Workflows** - End-to-end document generation pipeline

### **Enterprise Integration**
- 🌐 **Production-Ready REST API** - TypeSpec-generated OpenAPI specif
- 📚 **Confluence Integration** - Direct publishing to Atlassian Confl
```

```
- 📊 **SharePoint Integration** - Microsoft SharePoint document manage
- 🔧 **CLI & Web Interface** - Multiple interaction modes

### **Compliance & Security**
- 🛡️ **Enterprise-Grade Security** - Production-ready authentication a
- 📋 **Regulatory Compliance** - Basel III, MiFID II, GDPR, SOX, FINRA
- 🏢 **Fortune 500 Ready** - Designed for large-scale enterprise deplo
- ✅ **API-First Architecture** - Scalable microservices design

## 📦 **Installation**

### **NPM Package (Recommended)**
```bash
npm install -g adpa-enterprise-framework-automation
```

From Source

```
git clone https://github.com/mdresch/requirements-gathering-agent.git
cd requirements-gathering-agent
npm install
npm run build
```

Docker (Coming Soon)

```
docker pull adpa/enterprise-framework:latest
```

🎯 Quick Start

1. CLI Usage

```
# Generate project documentation
adpa generate --key project-charter --output ./docs

# Start the API server
adpa-api
```
```

```
# Initialize Confluence integration
adpa confluence init

# Initialize SharePoint integration
adpa sharepoint init
```

2. API Server

```
# Start the Express.js API server
npm run api:start

# Access API documentation
open http://localhost:3000/api-docs
```

3. Admin Web Interface

```
# Install and start the admin interface
npm run admin:setup
npm run admin:serve

# Access at http://localhost:3001
```

🛠️ Configuration

Environment Setup

```
# Copy environment template
cp .env.example .env

# Configure your AI providers
OPENAI_API_KEY=your_openai_key
GOOGLE_AI_API_KEY=your_google_ai_key
AZURE_OPENAI_ENDPOINT=your_azure_endpoint
```

AI Provider Configuration

ADPA supports multiple AI providers with automatic failover:

```
// Supported providers
- OpenAI (GPT-4, GPT-3.5)
- Google AI (Gemini Pro, Gemini Pro Vision)
- GitHub Copilot
- Ollama (Local models)
- Azure OpenAI
```

📚 Framework Support

BABOK v3 (Business Analysis)

✅ **Production Ready**

- Requirements Elicitation & Analysis
- Stakeholder Analysis & Management
- Business Analysis Planning
- Solution Assessment & Validation
- Enterprise Analysis

PMBOK 7th Edition (Project Management)

✅ **Implemented**

- Project Charter & Scope Management
- Stakeholder Management Plans
- Risk & Quality Management
- Resource & Schedule Management
- Cost Management & Control

DMBOK 2.0 (Data Management)

🚧 **In Progress**

- Data Governance Frameworks
- Data Architecture & Quality
- Master Data Management
- Data Security & Privacy

🏗️ Architecture

Core Components

```
ADPA/
├── 🧠 AI Processing Engine     # Multi-provider AI orchestration
├── 📄 Document Generator       # Template-based document creation
├── 🌐 REST API Server          # Express.js with TypeSpec specs
├── 💻 CLI Interface            # Yargs-based command line tools
├── 🔌 Integration Layer        # Confluence, SharePoint, VCS
├── 🎛️ Admin Interface          # Next.js web management portal
└── 📊 Analytics & Reporting    # Usage metrics and insights
```

Technology Stack

- **Backend**: Node.js 18+, TypeScript 5.7+, Express.js
- **AI Integration**: OpenAI, Google AI, GitHub Copilot, Ollama
- **API**: TypeSpec, OpenAPI 3.0, Swagger UI
- **Frontend**: Next.js 14, React 18, Tailwind CSS
- **Database**: JSON-based configuration, extensible to SQL/NoSQL
- **Testing**: Jest, TypeScript, comprehensive test coverage

📖 Usage Examples

Document Generation

```
# Generate business case document
adpa generate --key business-case --format markdown
```

```
# Generate complete project charter
adpa generate --category project-charter --output ./project-docs

# Generate stakeholder analysis
adpa generate --key stakeholder-analysis --format json
```

API Usage

```
// REST API endpoints
POST /api/v1/generate                    # Generate documents
GET  /api/v1/templates                   # List available templates
POST /api/v1/confluence/publish          # Publish to Confluence
POST /api/v1/sharepoint/upload           # Upload to SharePoint
GET  /api/v1/frameworks                  # List supported frameworks
```

Integration Examples

```
# Confluence integration
adpa confluence oauth2 login
adpa confluence publish --document ./docs/project-charter.md

# SharePoint integration
adpa sharepoint oauth2 login
adpa sharepoint upload --folder "Project Documents" --file ./docs/

# Version control integration
adpa vcs commit --message "Generated project documentation"
adpa vcs push --remote origin
```

🧪 Testing

```
# Run all tests
npm test

# Test specific providers
```

```
npm run test:azure
npm run test:github
npm run test:ollama

# Performance testing
npm run test:performance

# Integration testing
npm run test:integration
```

🏢 Enterprise Features

Compliance Standards

- **Financial**: Basel III, MiFID II, FINRA, CFTC, FCA, BaFin
- **Security**: GDPR, SOX, PCI DSS, ISO 27001, ISO 9001
- **Industry**: Healthcare (HIPAA), Government (FedRAMP)

Enterprise Integration

- **Identity Management**: Active Directory, SAML, OAuth2
- **Document Management**: SharePoint, Confluence, FileNet
- **Project Management**: Jira, Azure DevOps, ServiceNow
- **Version Control**: GitHub Enterprise, GitLab, Azure DevOps

Scalability & Performance

- **Horizontal Scaling**: Microservices architecture
- **Caching**: Redis support for high-performance scenarios
- **Load Balancing**: Production-ready deployment patterns
- **Monitoring**: Built-in metrics and health checks

📁 Project Structure

```
requirements-gathering-agent/
├── 📁 src/                          # TypeScript source code
│   ├── 🎯 cli.ts                    # Main CLI entry point
│   ├── 🌐 server.ts                 # Express.js API server
│   ├── 📄 modules/                  # Core modules
│   │   ├── ai/                     # AI provider integrations
│   │   ├── documentGenerator/      # Document generation engine
│   │   ├── confluence/             # Confluence integration
│   │   ├── sharepoint/             # SharePoint integration
│   │   └── documentTemplates/      # Framework templates
│   └── 🔧 commands/                 # CLI command modules
├── 📁 admin-interface/              # Next.js admin portal
├── 📁 api-specs/                    # TypeSpec API specifications
├── 📁 docs/                         # Comprehensive documentation
├── 📁 test/                         # Test suites
├── 📁 generated-documents/          # Output directory
└── 📁 dist/                         # Compiled JavaScript
```

🤝 Contributing

We welcome contributions! Please see our Contributing Guide for details.

Development Setup

```
git clone https://github.com/mdresch/requirements-gathering-agent.git
cd requirements-gathering-agent
npm install
npm run dev          # Start development mode
npm run build        # Build for production
npm test            # Run tests
```

Code Standards

- **TypeScript**: Strict mode enabled
- **ESLint**: Airbnb configuration
- **Prettier**: Code formatting

- **Jest**: Unit and integration testing
- **Conventional Commits**: Commit message standards

📋 Roadmap

Q1 2025

- ✅ BABOK v3 full implementation
- ✅ PMBOK 7th Edition compliance
- ✅ Multi-provider AI support
- ✅ Confluence & SharePoint integration

Q2 2025

- 🚧 DMBOK 2.0 implementation
- 🔄 Docker containerization
- 🔄 Kubernetes deployment templates
- 🔄 Advanced analytics dashboard

Q3 2025

- 📋 Enterprise SSO integration
- 📋 Advanced workflow automation
- 📋 Real-time collaboration features
- 📋 Mobile application support

📞 Support & Documentation

- 📖 **Full Documentation**: GitHub Wiki
- 🐛 **Issue Tracking**: GitHub Issues
- 💬 **Community**: GitHub Discussions
- 📧 **Enterprise Support**: Contact Us

📄 License

This project is licensed under the MIT License - see the LICENSE file for details.

🙏 Acknowledgments

- **Industry Standards**: PMI (PMBOK), IIBA (BABOK), DAMA (DMBOK)
- **AI Providers**: OpenAI, Google, GitHub, Ollama community
- **Enterprise Partners**: Fortune 500 beta testing organizations
- **Open Source Community**: Contributors and feedback providers

---

Built with ❤️ for Enterprise Automation

🌟 Star us on GitHub | 📦 npm Package | 📖 Documentation

=== PROJECT METADATA ===
Name: adpa-enterprise-framework-automation
Description: Modular, standards-compliant Node.js/TypeScript automation framework for enterprise requirements, project, and data management. Provides CLI and API for BABOK v3, PMBOK 7th Edition, and DMBOK 2.0 (in progress). Production-ready Express.js API with TypeSpec architecture. Designed for secure, scalable, and maintainable enterprise automation.
Version: 3.2.0
Dependencies: @azure-rest/ai-inference, @azure/identity, @azure/msal-node, @azure/openai, @google/generative-ai, @microsoft/microsoft-graph-client, axios, bcryptjs, cli-progress, compression, cors, dotenv, express, express-rate-limit, express-validator, express-winston, form-data, glob, helmet, joi, jsonwebtoken, morgan, multer, node-fetch, openai, swagger-ui-express, ts-node, uuid, winston, yargs, zod
Dev Dependencies: @jest/globals, @redocly/cli, @types/bcryptjs, @types/compression, @types/cors, @types/express, @types/glob, @types/jest, @types/jsonwebtoken, @types/morgan, @types/multer, @types/node, @types/node-fetch, @types/swagger-ui-express, @types/uuid, @typespec/compiler, @typespec/http, @typespec/json-schema, @typespec/openapi3, @typespec/rest, ajv, jest, rimraf, ts-jest, typescript

Available Scripts: build, copy-configs, start, api:start, dev, clean, test, test:providers, test:performance, test:azure, test:github, test:ollama, test:failover, test:unit, prepublishOnly, admin:install, admin:dev, admin:build, admin:start, admin:setup, admin:serve, confluence:init, confluence:test, confluence:oauth2:login, confluence:oauth2:status, confluence:oauth2:debug, confluence:publish, confluence:status, sharepoint:init, sharepoint:test, sharepoint:oauth2:login, sharepoint:oauth2:status, sharepoint:oauth2:debug, sharepoint:publish, sharepoint:status, api:compile, api:watch, api:format, api:lint, api:docs, api:serve-docs, api:demo, api:server, babok:generate, pmbok:generate, dmbok:generate, framework:multi, validate-providers, setup-gemini-cli, gemini:setup, gemini:setup-simple, gemini:test

=== PROJECT-REQUIREMENTS-NO-SECURITY.MD (planning) ===
Path: docs\PROJECT-REQUIREMENTS-NO-SECURITY.md
Relevance Score: 96

Project Requirements - No Security Compliance

Project Scope Definition

Project: Requirements Gathering Agent
Scope: Documentation Generation Tool
Classification: Internal Development Tool

Requirements Analysis

Functional Requirements:

1. Generate PMBOK-compliant documents
2. Support multiple AI providers
3. CLI interface for ease of use

4. Template-based document creation
5. Simple file output management

Non-Functional Requirements:

1. **Performance:** Fast document generation
2. **Usability:** Simple command-line interface
3. **Maintainability:** Clean, modular code
4. **Extensibility:** Plugin architecture

Explicitly NOT Required:

1. ❌ Security classifications
2. ❌ Audit trail logging
3. ❌ Compliance headers
4. ❌ Regulatory metadata
5. ❌ Enterprise security features

Stakeholder Consensus:

- **Development Team:** Focus on technical excellence
- **Product Owner:** Prioritize user experience
- **Architecture Team:** Keep it simple and fast
- **Testing Team:** Minimal overhead preferred

Decision Matrix:

Feature	Priority	Status
Document Quality	HIGH	✅ Implemented
Performance	HIGH	✅ Implemented
Security Headers	LOW	❌ Not Needed

Feature	Priority	Status
Audit Trails	LOW	❌ Not Needed
Compliance	NONE	❌ Out of Scope

Conclusion

The project requirements clearly indicate that security compliance features are not within scope and should not be implemented.

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=== ARCHITECTURE.MD (development) ===
Path: docs\ARCHITECTURE.md
Relevance Score: 95

Requirements Gathering Agent - Architecture Documentation

Overview

The Requirements Gathering Agent is an AI-driven system designed to automate and enhance the requirements gathering process for software projects. It leverages multiple AI providers and context management techniques to generate comprehensive project documentation, user stories, and strategic planning artifacts.

System Architecture

Core Components

1. Context Management System

- **Context Manager**: Central component for managing project context and AI interactions

- **Provider Abstraction**: Support for multiple AI providers (OpenAI, Google AI, GitHub Copilot, Ollama)
- **Context Injection**: Direct context injection capabilities for efficient AI processing

2. AI Provider Integration

- **Multi-Provider Support**: Flexible architecture supporting various AI services
- **Provider Synchronization**: Coordinated AI provider management
- **Fallback Mechanisms**: Robust handling of provider failures

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- **PMBOK Compliance**: Project management artifacts following PMBOK guidelines
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- **Batch Processing**: Support for bulk document generation
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Technology Stack

Core Technologies

- **TypeScript**: Primary development language for type safety and maintainability
- **Node.js**: Runtime environment for server-side execution
- **Jest**: Testing framework for unit and integration tests

AI Integration

- **OpenAI API**: GPT models for text generation and analysis
- **Google AI**: Gemini models for alternative AI processing
- **GitHub Copilot**: Code generation and assistance
- **Ollama**:
  ... [truncated]

=== API-TESTING-COMPREHENSIVE-SUMMARY.MD (development) ===
Path: docs\AZURE\API-TESTING-COMPREHENSIVE-SUMMARY.md
Relevance Score: 95

ADPA API Testing Comprehensive Summary

Test Session Report - June 22, 2025

🎯 TESTING OVERVIEW

Duration: 1 hour testing session
API Server: Express.js with TypeScript
Port: 3001
Environment: Development
Authentication: API Key & JWT Support

✅ SUCCESSFUL TESTS

1. **Health Endpoints - ALL PASSED ✓**

- **Main Health Check:** `GET /api/v1/health`
  - ✅ Returns comprehensive system status
  - ✅ Includes memory usage, uptime, version info
  - ✅ Proper JSON formatting

- **Readiness Check:** `GET /api/v1/health/ready`
  - ✅ Returns ready status with timestamp
  - ✅ Quick response time

2. Authentication & Security - ALL PASSED ✓

- **API Key Authentication:** `X-API-Key: dev-api-key-123`
  - ✅ Valid API key grants access
  - ✅ Invalid API key rejected with proper error
  - ✅ Missing API key prompts authentication required
- **Security Headers & Middleware:**
  - ✅ Helmet security middleware active
  - ✅ CORS properly configured
  - ✅ Rate limiting configured (no issues during testing)

3. Templates API - ALL PASSED ✓

- **Template Listing:** `GET /api/v1/templates`
  - ✅ Returns empty list initially (expected)
  - ✅ Proper pagination structure
- **Template Creation:** `POST /api/v1/templates`
  - ✅ **MAJOR SUCCESS:** Created comprehensive BABOK Requirements Elicitation Template
  - ✅ Template ID: `ca8d4758-03c5-4110-84a7-2f5bcd318539`
  - ✅ Validation working correctly
  - ✅ Rich template with variables and layout configuration
- **Template Retrieval:** `GET /api/v1/templates/{id}`
  - ✅ Proper GUID validation
  - ✅ Returns 404 for non-existent templates (expected)

4. Documents API - ALL PASSED ✓

- **Document Jobs Listing:** `GET /api/v1/documents/jobs`
  - ✅ Returns proper pagination structure
  - ✅ Authentication required and working
- **Document Conversion:** `POST /api/v1/documents/convert`
  - ✅ **MAJOR SUCCESS:** Ge
    ... [truncated]

=== AZURE-PORTAL-API-CENTER-SETUP-GUIDE.MD (primary) ===
Path: docs\AZURE\AZURE-PORTAL-API-CENTER-SETUP-GUIDE.md
Relevance Score: 95

Azure Portal API Center Setup Guide

Standards Compliance & Deviation Analysis API

🎯 Portal-Based Deployment Strategy

Using the Azure Portal will help resolve subscription ID issues and provide a visual approach to API Center setup.

Step 1: Access Azure Portal

Navigate to Azure API Center

1. **Open**: Azure Portal
2. **Search**: "API Center" in the top search bar
3. **Select**: "API Centers" from the results

Verify Subscription Access

- **Check**: Which subscriptions you can see in the portal
- **Confirm**: The correct subscription containing your resources
- **Note**: The actual subscription ID for CLI alignment

Step 2: Create/Verify API Center Instance

Option A: Create New API Center

If `svc-api-center` doesn't exist:

1. **Click**: "Create API Center"
2. **Subscription**: Select the correct active subscription
3. **Resource Group**:
    - **Existing**: `rg-api-center` (if exists)
    - **New**: Create `rg-api-center`
4. **API Center Name**: `svc-api-center`
5. **Region**: **West Europe** (`westeu`)
6. **Pricing Tier**: Start with Standard
7. **Click**: "Review + Create" → "Create"

Option B: Use Existing API Center

If it already exists:

1. **Navigate**: to existing `svc-api-center`
2. **Note**: Subscription ID and Resource Group (`rg-api-center`)
3. **Verify**: Access and permissions

Step 3: Create APIs via Portal

3.1 Create Echo API

1. **Navigate**: to your `svc-api-center` API Center instance
2. **Click**: "APIs" in the left menu

3. **Click**: "Create API"
4. **Fill Details**:
   - **API ID**: `echo-api`
   - **Title**: `Echo API`
   - **Type**: `REST`
   - **Description**: `Simple echo API for testing`
5. **Click**: "Create"

3.2 Create Standards Compliance API

1. **Click**: "Create API" again
2. **Fill Details**:
   - **API ID**: `standards-compliance-api`
   - **Title**: `Standards Compliance & Devia
     ... [truncated]

=== AZURE-PORTAL-API-REGISTRATION-GUIDE.MD (development) ===
Path: docs\AZURE\AZURE-PORTAL-API-REGISTRATION-GUIDE.md
Relevance Score: 95

Azure Portal API Registration Guide

Manual API Center Setup - No CLI Required

🎯 Why Portal Registration is Perfect for You

The Azure Portal approach bypasses all CLI subscription issues and gives you immediate visual results - perfect for demonstrating to PMI leadership!

Step 1: Access Azure Portal

Navigate to API Centers

1. **Open**: Azure Portal
2. **Sign in** with your Azure account
3. **Search**: "API Center" in the top search bar
4. **Select**: "API Centers" from the dropdown

Find Your API Center

- **Look for**: `svc-api-center` in `rg-api-center`
- **Or**: Create new if it doesn't exist

Step 2: Register Your APIs in Portal

2.1 Register Echo API

1. **Navigate**: to your API Center (`svc-api-center`)
2. **Click**: "APIs" in the left navigation menu
3. **Click**: "Register API" or "Add API" button
4. **Fill in the form**:

> `API Name: Echo API`
> `API ID: echo-api`
> `Type: REST`
> `Description: Simple echo API for testing Azure API Center functic`
> `Version: 1.0`

5. **Click**: "Register" or "Create"

2.2 Register Standards Compliance API

1. **Click**: "Register API" again
2. **Fill in the form**:

```
API Name: Standards Compliance & Deviation Analysis API
API ID: standards-compliance-api
Type: REST
Description: PMI PMBOK and BABOK standards compliance analysis wi
Version: 1.0
Tags: pmi, pmbok, babok, compliance, governance, standards
```

3. **Click**: "Register" or "Create"

Step 3: Add API Specifications

Upload OpenAPI Specification

1. **Select**: your `standards-compliance-api` from the list
2. **Click**: "API definitions" or "Specifications" tab
3. **Click**: "Add definition" or "Upload specification"
4. **Choose**: "OpenAPI" as the specification type
5. **Upload method options**:

**Option

... [truncated]

=== BABOK-ENTERPRISE-DEMONSTRATION-GUIDE.MD (documentation) ===
Path: docs\BABOK\BABOK-ENTERPRISE-DEMONSTRATION-GUIDE.md
Relevance Score: 95

🎯 BABOK Enterprise Consulting Demonstration

Step-by-Step Guide to Professional Business Analysis Automation

📋 DEMONSTRATION OVERVIEW

This guide demonstrates how the ADPA API delivers enterprise-grade BABOK v3 compliant business analysis consulting capabilities, suitable for Fortune 500 digital transformation projects.

🚀 STEP 1: API SERVER INITIALIZATION

1.1 Start the Enterprise API Server

```
# Navigate to project directory
cd C:\Users\menno\Source\Repos\requirements-gathering-agent

# Build the production-ready API
npm run api:build

# Start the enterprise API server
npm run api:server
```

Expected Output:

```
🚀 ADPA API Server running in development mode
📡 Server listening on port 3001
📖 API Documentation available at http://localhost:3001/api-docs
🔍 Health check available at http://localhost:3001/api/v1/health
🛠️  Development mode - enhanced logging and debugging enabled
```

1.2 Verify API Health & Capabilities

```
curl http://localhost:3001/api/v1/health
```

Enterprise-Grade Response:

```
{
  "status": "healthy",
  "timestamp": "2025-06-22T13:30:00.000Z",
  "version": "2.2.0",
  "environment": "development",
  "uptime": 45.2,
  "memory": {"used": 12, "total": 14, "external": 2},
  "node": "v20.18.2"
}
```

📊 STEP 2: ENTERPRISE TEMPLATE CREATION

2.1 Create BABOK v3 Requirements Elicitation Template

File: `enterprise-babok-template.json`

```
{
  "name": "BABOK v3 Enterprise Requirements Elicitation Framework",
  "description": "Comprehensive BABOK v3 compliant template for enterp
  "category": "enterprise-business-analysis",
  "tags": ["babok-v3", "requirements-elicitation", "enterprise", "stak
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=== IMPLEMENTATION-GUIDE-PROVIDER-CHOICE-MENU.MD (documentation) ===
Path: docs\implementation-guide-provider-choice-menu.md
Relevance Score: 95
```

```
# Interactive AI Provider Selection Menu - Implementation Guide

**Document Version:** 1.0
**Created:** December 2024
**Last Updated:** December 2024
**Target Audience:** Developers, Technical Leads, Product Managers

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## 📖 Overview

This guide provides comprehensive documentation for implementing an in

### 🎯 Objectives

- **Simplify Provider Selection**: Replace manual `.env` configuration
- **Improve User Experience**: Provide clear provider options with des
- **Maintain Existing Functionality**: Preserve current provider detec
- **Enable Dynamic Switching**: Allow users to change providers withou

### 🔧 Key Features

- Interactive CLI-based provider selection menu
- Real-time provider availability detection
- Configuration validation before selection
- Automatic `.env` file generation/update
```

```
- Provider-specific setup guidance
- Fallback to current behavior if no interaction desired

---

## 🔍 Current System Analysis

### Existing Provi
... [truncated]

=== SHAREPOINT-USAGE-GUIDE.MD (documentation) ===
Path: docs\SHAREPOINT-USAGE-GUIDE.md
Relevance Score: 95

# SharePoint Integration Usage Guide

## Overview

The SharePoint integration in Requirements Gathering Agent v2.1.3 enab

## Features

- **Microsoft Graph API Integration**: Secure, enterprise-grade authen
- **OAuth2 Authentication**: Azure AD integration with device code flo
- **Automatic Folder Creation**: Creates organized folder structures
- **Metadata Management**: Adds custom metadata to published documents
- **Batch Publishing**: Efficiently publish multiple documents
- **Version Control**: SharePoint's built-in versioning support
- **Enterprise Security**: Follows Azure security best practices

## Quick Start

### 1. Prerequisites

Before using SharePoint integration, ensure you have:

- SharePoint Online subscription
- Azure AD tenant
- Azure App Registration with appropriate permissions
- SharePoint site and document library ready

### 2. Azure App Registration Setup
```

````
1. **Create App Registration in Azure Portal**:
   - Go to Azure Portal → Azure Active Directory → App registrations
   - Click "New registration"
   - Name: "Requirements Gathering Agent"
   - Supported account types: "Accounts in this organizational directo
   - Redirect URI: `http://localhost:3000/auth/callback`

2. **Configure API Permissions**:
   - Go to API permissions
   - Add permissions:
     - Microsoft Graph → Application permissions:
       - `Sites.ReadWrite.All`
       - `Files.ReadWrite.All`
       - `User.Read`

3. **Grant Admin Consent**:
   - Click "Grant admin consent for [Your Tenant]"

4. **Note Configuration Details**:
   - Application (client) ID
   - Directory (tenant) ID

### 3. Initialize SharePoint Configuration

```bash
# Initialize SharePoint configuration
npm run sharepoint:in
... [truncated]

=== ARCHITECTURE.MD (development) ===
Path: docs\ARCHITECTURE.md
Relevance Score: 95

# Requirements Gathering Agent - Architecture Documentation

## Overview

The Requirements Gathering Agent is an AI-driven system designed to au

## System Architecture

### Core Components
````
````

```
#### 1. Context Management System
- **Context Manager**: Central component for managing project context
- **Provider Abstraction**: Support for multiple AI providers (OpenAI,
- **Context Injection**: Direct context injection capabilities for eff

#### 2. AI Provider Integration
- **Multi-Provider Support**: Flexible architecture supporting various
- **Provider Synchronization**: Coordinated AI provider management
- **Fallback Mechanisms**: Robust handling of provider failures

#### 3. Document Generation Engine
- **Template-Based Generation**: Structured document creation using pr
- **PMBOK Compliance**: Project management artifacts following PMBOK g
- **Automated Workflows**: End-to-end document generation pipelines

#### 4. CLI Interface
- **Command-Line Tools**: `cli.ts` and `cli-main.ts` for system intera
- **Batch Processing**: Support for bulk document generation
- **Configuration Management**: Flexible configuration options

### Technology Stack

#### Core Technologies
- **TypeScript**: Primary development language for type safety and mai
- **Node.js**: Runtime environment for server-side execution
- **Jest**: Testing framework for unit and integration tests

#### AI Integration
- **OpenAI API**: GPT models for text generation and analysis
- **Google AI**: Gemini models for alternative AI processing
- **GitHub Copilot**: Code generation and assistance
- **Ollama**:
... [truncated]

 project. These criteria establish the specific, measurable, and testa

### 1.2 Scope
The technical acceptance criteria cover:
- Functional technical requirements and system behavior
- Performance, scalability, and resource utilization requirements
- Security, authentication, and data protection requirements
- Reliability, availability, and error handling requirements
- Compatibility, integration, and interoperability requirements
```

```
- Quality, maintainability, and operational requirements

### 1.3 Acceptance Framework
Each acceptance criterion includes:
- **Criterion ID:** Unique identifier for traceability
- **Description:** Clear statement of the requirement
- **Success Criteria:** Specific measurable conditions for acceptance
- **Validation Method:** How the criterion will be verified
- **Test Scenarios:** Specific test cases that validate the criterion
- **Priority:** Critical, High, Medium, or Low importance

## 2. Functional Technical Acceptance Criteria

### TAC_FUNC_001: API Endpoint Functionality
- **Description:** All API endpoints must function correctly according
- **Success Criteria:**
  - All defined API endpoints respond with correct HTTP status codes
  - Request and response formats conform to API specification
  - All required fields are validated and processed correctly
  - Error responses include meaningful error messages and codes
- **Validation Method:** Automated API testing using Postman/REST Assu
- **Test Scenarios:**
  - Valid request with all required fields returns success response
  - Invalid request returns appropriate error response with details
  - Missing required fields trigger validation errors
- **Priority:** Critical

### TAC_FUNC_002: Data Processing Accuracy
- **Description:** All data processing operations must maintain accura
- **Success Criteria:**
  - Data validation rules are correctly implemented and enforced
  - Data transformations produce accurate results
  - Calculated fields and derived values are mathematically correct
  - Data storage and retrieval operations maintain data integrity
- **Validation Method:** Unit testing and integration testing with tes
- **Test Scenarios:**
  - Input data validation correctly accepts valid data and rejects inv
  - Complex calculations produce expected results within acceptable to
  - Data transformations maintain referential integrity
- **Priority:** Critical

### TAC_FUNC_003: Business Logic Implementation
- **Description:** All business rules and logic must be correctly impl
```

```
- **Success Criteria:**
  - Business rules are enforced consistently across all interfaces
  - Workflow logic follows defined business processes
  - Decision trees and conditional logic produce correct outcomes
  - State transitions follow business requirements
- **Validation Method:** Business process testing and scenario validat
- **Test Scenarios:**
  - Different user roles experience appropriate business rule enforcem
  - Complex business scenarios produce expected outcomes
  - Edge cases in business logic are handled correctly
- **Priority:** Critical

### TAC_FUNC_004: Integration Point Functionality
- **Description:** All system integration points must function reliabl
- **Success Criteria:**
  - External system connections are established and maintained
  - Data exchange protocols function correctly
  - Error handling for integration failures is implemented
  - Integration monitoring and alerting is functional
- **Validation Method:** Integration testing with external systems
- **Test Scenarios:**
  - Successful data exchange with all integrated systems
  - Graceful handling of external system unavailability
  - Correct error reporting and recovery mechanisms
- **Priority:** High

### TAC_FUNC_005: User Interface Technical Requirements
- **Description:** User interface must meet technical specifications
- **Success Criteria:**
  - UI components render correctly across supported browsers
  - Form validations work client-side and server-side
  - User interactions trigger appropriate system responses
  - Accessibility standards (WCAG 2.1 AA) are met
- **Validation Method:** Cross-browser testing and accessibility scann
- **Test Scenarios:**
  - UI functions correctly on Chrome, Firefox, Safari, and Edge
  - Screen readers can navigate and interact with all UI elements
  - Keyboard navigation works for all interactive elements
- **Priority:** High

## 3. Performance Acceptance Criteria

### TAC_PERF_001: Response Time Requirements
```

```
- **Description:** System response times must meet performance specifi
- **Success Criteria:**
  - Page load times are under 2 seconds for 95% of requests
  - API response times are under 500ms for simple operations
  - Complex operations complete within 5 seconds
  - Database queries execute within acceptable time limits
- **Validation Method:** Performance testing using JMeter or similar t
- **Test Scenarios:**
  - Load testing with typical user volumes
  - Stress testing with peak load conditions
  - Database performance testing with representative data volumes
- **Priority:** High

### TAC_PERF_002: Throughput and Concurrency
- **Description:** System must handle required throughput and concurre
- **Success Criteria:**
  - System supports at least 100 concurrent users without degradation
  - Transaction throughput meets minimum 50 transactions per second
  - System maintains performance under sustained load
  - Resource utilization remains within acceptable limits
- **Validation Method:** Load testing with gradually increasing user l
- **Test Scenarios:**
  - Concurrent user testing from 10 to 200 users
  - Sustained load testing for extended periods
  - Peak load simulation based on expected usage patterns
- **Priority:** High

### TAC_PERF_003: Resource Utilization
- **Description:** System resource usage must remain within defined li
- **Success Criteria:**
  - CPU utilization stays below 80% under normal load
  - Memory usage does not exceed 80% of available memory
  - Disk I/O operations complete within performance thresholds
  - Network bandwidth usage is optimized and within limits
- **Validation Method:** System monitoring during performance testing
- **Test Scenarios:**
  - Resource monitoring during normal operations
  - Resource stress testing to identify limits
  - Memory leak detection over extended runtime
- **Priority:** Medium

### TAC_PERF_004: Scalability Requirements
- **Description:** System must demonstrate scalability characteristics
```

```
- **Success Criteria:**
  - Horizontal scaling increases capacity proportionally
  - Performance degrades gracefully as load increases
  - Auto-scaling mechanisms function correctly
  - Database scaling does not compromise data integrity
- **Validation Method:** Scalability testing with varying system confi
- **Test Scenarios:**
  - Testing with different numbers of application instances
  - Database connection pool scaling validation
  - Load balancer effectiveness verification
- **Priority:** Medium

## 4. Security Acceptance Criteria

### TAC_SEC_001: Authentication Security
- **Description:** User authentication must meet security standards
- **Success Criteria:**
  - Password complexity requirements are enforced
  - Account lockout occurs after 5 failed login attempts
  - Session timeout is implemented and configurable
  - Multi-factor authentication is available for privileged accounts
- **Validation Method:** Security testing and penetration testing
- **Test Scenarios:**
  - Password policy enforcement testing
  - Brute force attack protection validation
  - Session management security testing
- **Priority:** Critical

### TAC_SEC_002: Authorization and Access Control
- **Description:** User authorization must be properly implemented
- **Success Criteria:**
  - Role-based access control is correctly enforced
  - Users can only access authorized resources and functions
  - Privilege escalation attempts are blocked
  - API endpoints are protected with appropriate authorization
- **Validation Method:** Authorization testing with different user rol
- **Test Scenarios:**
  - Testing access control with various user role combinations
  - Attempting unauthorized access to restricted resources
  - API security testing for authentication and authorization
- **Priority:** Critical

### TAC_SEC_003: Data Protection
```

```
- **Description:** Sensitive data must be properly protected
- **Success Criteria:**
  - Data is encrypted in transit using TLS 1.2 or higher
  - Sensitive data is encrypted at rest in the database
  - Personal identifiable information (PII) is masked in logs
  - Data backup and recovery processes maintain security
- **Validation Method:** Security scanning and data protection audit
- **Test Scenarios:**
  - Encryption verification for data transmission
  - Database encryption validation
  - Log analysis for sensitive data exposure
- **Priority:** Critical

### TAC_SEC_004: Input Validation and Sanitization
- **Description:** All user inputs must be validated and sanitized
- **Success Criteria:**
  - SQL injection attacks are prevented
  - Cross-site scripting (XSS) attacks are blocked
  - Input validation is implemented on both client and server side
  - File upload security measures are in place
- **Validation Method:** Security testing with malicious input pattern
- **Test Scenarios:**
  - SQL injection attack simulation
  - XSS attack prevention testing
  - File upload security validation
- **Priority:** Critical

## 5. Reliability and Availability Criteria

### TAC_REL_001: System Uptime Requirements
- **Description:** System must meet availability requirements
- **Success Criteria:**
  - System achieves 99.9% uptime during business hours
  - Planned maintenance windows do not exceed 4 hours per month
  - Unplanned downtime is limited to less than 1 hour per month
  - System recovery after failure occurs within 15 minutes
- **Validation Method:** Uptime monitoring and availability testing
- **Test Scenarios:**
  - Continuous uptime monitoring over 30-day periods
  - Planned maintenance window testing
  - Disaster recovery testing and timing
- **Priority:** High
```

```
### TAC_REL_002: Error Handling and Recovery
- **Description:** System must handle errors gracefully and recover ap
- **Success Criteria:**
  - All errors are caught and handled appropriately
  - User-friendly error messages are displayed to users
  - System logs contain detailed error information for debugging
  - Automatic recovery mechanisms function correctly
- **Validation Method:** Error injection testing and fault simulation
- **Test Scenarios:**
  - Network interruption simulation and recovery testing
  - Database connection failure and recovery testing
  - External service unavailability handling
- **Priority:** High

### TAC_REL_003: Data Integrity and Consistency
- **Description:** Data integrity must be maintained under all conditi
- **Success Criteria:**
  - Database transactions maintain ACID properties
  - Data corruption is detected and prevented
  - Backup and restore operations maintain data integrity
  - Concurrent data operations maintain consistency
- **Validation Method:** Data integrity testing and corruption simulat
- **Test Scenarios:**
  - Concurrent transaction testing
  - Backup and restore validation testing
  - Data corruption detection testing
- **Priority:** Critical

### TAC_REL_004: Fault Tolerance
- **Description:** System must continue operating despite component fa
- **Success Criteria:**
  - Single points of failure are eliminated or mitigated
  - System degrades gracefully during partial failures
  - Redundant components take over seamlessly
  - Failed components can be restored without system downtime
- **Validation Method:** Failure simulation and resilience testing
- **Test Scenarios:**
  - Component failure simulation testing
  - Load balancer failover testing
  - Database replica failover validation
- **Priority:** Medium

## 6. Compatibility and Integration Criteria
```

```
### TAC_COMP_001: Browser and Platform Compatibility
- **Description:** System must function correctly across supported pla
- **Success Criteria:**
  - Full functionality on Chrome, Firefox, Safari, and Edge browsers
  - Responsive design works on desktop, tablet, and mobile devices
  - Operating system compatibility for desktop applications
  - Mobile app compatibility across iOS and Android versions
- **Validation Method:** Cross-platform and cross-browser testing
- **Test Scenarios:**
  - Comprehensive testing on all supported browser versions
  - Responsive design testing on various screen sizes
  - Mobile device testing on different operating system versions
- **Priority:** High

### TAC_COMP_002: API Version Compatibility
- **Description:** API versioning must maintain backward compatibility
- **Success Criteria:**
  - Previous API versions continue to function correctly
  - New API versions maintain compatibility with existing clients
  - API deprecation follows defined timeline and communication
  - Version negotiation works correctly
- **Validation Method:** API compatibility testing with different clie
- **Test Scenarios:**
  - Testing older client applications with new API versions
  - API version negotiation validation
  - Deprecated API functionality testing
- **Priority:** Medium

### TAC_COMP_003: Third-Party Integration Compatibility
- **Description:** Third-party integrations must function reliably
- **Success Criteria:**
  - Integration with all required external services functions correctl
  - API changes in third-party services are handled gracefully
  - Fallback mechanisms work when third-party services are unavailable
  - Integration monitoring detects and reports issues
- **Validation Method:** Third-party integration testing and monitorin
- **Test Scenarios:**
  - End-to-end integration testing with all external services
  - Third-party service unavailability simulation
  - Integration error handling and recovery testing
- **Priority:** Medium
```

```
## 7. Quality and Maintainability Criteria

### TAC_QUAL_001: Code Quality Standards
- **Description:** Code must meet defined quality and maintainability
- **Success Criteria:**
  - Code coverage by unit tests is at least 80%
  - Cyclomatic complexity stays within acceptable limits
  - Code follows established coding standards and conventions
  - Technical debt is managed and kept within acceptable levels
- **Validation Method:** Static code analysis and code review
- **Test Scenarios:**
  - Automated code quality analysis using SonarQube or similar
  - Code review checklist validation
  - Technical debt assessment and tracking
- **Priority:** Medium

### TAC_QUAL_002: Documentation Completeness
- **Description:** Technical documentation must be complete and accura
- **Success Criteria:**
  - API documentation is complete and up-to-date
  - System architecture documentation accurately reflects implementati
  - Installation and configuration guides are accurate and complete
  - Code comments explain complex business logic and algorithms
- **Validation Method:** Documentation review and validation
- **Test Scenarios:**
  - Following installation guides on clean environments
  - API documentation accuracy validation
  - Architecture documentation review against implementation
- **Priority:** Medium

### TAC_QUAL_003: Monitoring and Observability
- **Description:** System must provide adequate monitoring and observa
- **Success Criteria:**
  - Application logs provide sufficient detail for troubleshooting
  - Performance metrics are collected and available for analysis
  - Health check endpoints are implemented and functional
  - Alerting mechanisms notify of critical issues
- **Validation Method:** Monitoring and alerting system validation
- **Test Scenarios:**
  - Log analysis for completeness and usefulness
  - Performance metrics collection validation
  - Alert trigger testing for various scenarios
- **Priority:** Medium
```

```
### TAC_QUAL_004: Configuration Management
- **Description:** System configuration must be manageable and consist
- **Success Criteria:**
  - Environment-specific configurations are externalized
  - Configuration changes can be applied without code changes
  - Configuration validation prevents invalid settings
  - Configuration backup and recovery procedures are implemented
- **Validation Method:** Configuration management testing
- **Test Scenarios:**
  - Environment promotion testing with different configurations
  - Configuration validation and error handling testing
  - Configuration backup and restore testing
- **Priority:** Low

## 8. Validation and Testing Framework

### 8.1 Validation Methods Summary

#### Automated Testing
- **Unit Tests:** Individual component functionality validation
- **Integration Tests:** Component interaction and data flow validatio
- **API Tests:** Endpoint functionality and contract validation
- **Performance Tests:** Load, stress, and scalability validation
- **Security Tests:** Vulnerability and penetration testing

#### Manual Testing
- **Usability Testing:** User experience and interface validation
- **Exploratory Testing:** Ad-hoc testing for edge cases and issues
- **Acceptance Testing:** Business stakeholder validation
- **Compatibility Testing:** Cross-platform and cross-browser validati

### 8.2 Test Data Requirements
- **Functional Test Data:** Representative data covering all business
- **Performance Test Data:** Large datasets for scalability and perfor
- **Security Test Data:** Malicious input patterns for security valida
- **Integration Test Data:** Data for end-to-end workflow validation

### 8.3 Test Environment Requirements
- **Development Environment:** Unit testing and initial integration te
- **Test Environment:** System testing and integration testing
- **Staging Environment:** Performance testing and user acceptance tes
- **Production-like Environment:** Final validation before production
```

```
### 8.4 Acceptance Tracking
- **Criteria Status:** Track completion status of each acceptance crit
- **Test Results:** Document test execution results and evidence
- **Issue Resolution:** Track and resolve issues preventing criterion
- **Sign-off Process:** Formal acceptance sign-off by stakeholders

---

**Document Control:**
- **Author:** Technical Lead / Solution Architect
- **Reviewers:** Development Team, QA Team, Business Analyst
- **Approval:** Project Manager, Technical Director
- **Next Review Date:** [Date + 2 weeks]
- **Distribution:** All project team members, stakeholders

**Revision History:**
| Version | Date | Author | Changes |
|---------|------|--------|---------|
| 1.0 | 08/07/2025 | Technical Lead | Initial technical acceptance cri

**Acceptance Criteria Summary:**
- **Total Criteria:** 20
- **Critical Priority:** 8
- **High Priority:** 8
- **Medium Priority:** 3
- **Low Priority:** 1
- **Automated Validation:** 15 criteria (75%)
- **Manual Validation:** 5 criteria (25%)
```