Test Plan

Source File: generated-documents\quality-assurance\test-plan.md
Generated: 08/07/2025 at 09:43:14
Generated by: Requirements Gathering Agent - PDF Converter

Test Plan

Generated by adpa-enterprise-framework-automation v3.2.0
Category: quality-assurance
Generated: 2025-07-08T01:39:11.581Z
Description: Detailed test plan with test scenarios and execution plan

---

Test Plan

Project: === PROJECT README ===

ADPA - Advanced Document Processing & Automation Framework

npm package 3.2.0

node >=18.0.0

TypeScript 5.7.2

License MIT

API-First TypeSpec

> ***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.

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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 functio
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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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. Test Plan Overview

### 1.1 Purpose
This test plan document outlines the testing approach, scope, resource
# 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

🙏 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
- **Automated Workflows**: End-to-end document generation pipelines

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- **Command-Line Tools**: `cli.ts` and `cli-main.ts` for system interaction
- **Batch Processing**: Support for bulk document generation
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- **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 functio
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
```

```markdown
# 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

---

## 📋 Table of Contents

1. [Overview](#overview)
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11. [Best Practices](#best-practices)
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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. It serves as a guide for all testing activities and ensures

### 1.2 Scope
This test plan covers all testing activities required to validate the
# 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
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) ===
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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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5. [Code Implementation](#code-implementation)
6. [Integration with Existing System](#integration-with-existing-syste
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12. [Troubleshooting](#troubleshooting)
```

```
---

## 📖 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]

. It includes unit testing, integration testing, system testing, and u

### 1.3 Objectives
- Validate all functional requirements are correctly implemented
- Ensure system performance meets specified requirements
- Verify system security and data protection measures
- Confirm system reliability and stability
- Validate user experience and accessibility standards

### 1.4 Assumptions
- Development team will provide stable builds for testing
- Test environments will be available as per schedule
- Required test data will be provided or can be generated
- Key stakeholders will be available for reviews and approvals

### 1.5 Constraints
- Testing timeline is dependent on development completion
- Limited budget for external testing tools and resources
- Production-like test environment may have some limitations
- Third-party system availability may impact integration testing

## 2. Test Items and Features

### 2.1 Features to be Tested
- **Core Functionality:** Primary business processes and workflows
- **User Interface:** All user-facing components and interactions
- **Data Management:** Data entry, validation, storage, and retrieval
- **Integration Points:** API integrations and third-party service con
- **Security Features:** Authentication, authorization, and data prote
- **Performance:** System responsiveness and scalability
- **Compatibility:** Cross-browser and device compatibility
```

```
### 2.2 Features Not to be Tested
- Third-party vendor system internal functionality
- Infrastructure components managed by external providers
- Legacy system components not modified in this project
- Administrative tools not used by end users

### 2.3 Test Item Identification
- **Application Version:** [To be determined based on build]
- **Database Version:** [To be specified]
- **API Version:** [To be specified]
- **Dependencies:** [List of dependent systems and versions]

## 3. Test Approach and Strategy

### 3.1 Test Levels

#### Unit Testing
- **Responsibility:** Development team
- **Coverage:** Individual components, functions, and methods
- **Tools:** Jest, JUnit, or equivalent testing framework
- **Criteria:** 80% code coverage minimum

#### Integration Testing
- **Responsibility:** Development and QA teams
- **Coverage:** Component interactions, API integrations, database ope
- **Tools:** Postman, REST Assured, custom automation frameworks
- **Focus:** Interface contracts, data flow, error handling

#### System Testing
- **Responsibility:** QA team
- **Coverage:** Complete integrated system functionality
- **Tools:** Selenium, Cypress, or equivalent automation tools
- **Focus:** End-to-end scenarios, cross-browser compatibility

#### User Acceptance Testing
- **Responsibility:** Business users and QA team
- **Coverage:** Business process validation, user workflow verificatio
- **Tools:** Manual testing supplemented by automation where appropria
- **Focus:** Business value delivery, user satisfaction

### 3.2 Test Types

#### Functional Testing
```

```
- **Scope:** Verify all functional requirements are correctly implemen
- **Methods:** Manual testing, automated regression testing
- **Coverage:** 100% of critical user stories, 95% of all user stories

#### Performance Testing
- **Scope:** Validate system performance under various load conditions
- **Methods:** Load testing, stress testing, volume testing
- **Tools:** Apache JMeter, LoadRunner, or k6
- **Criteria:** Response time < 2 seconds for 95% of transactions

#### Security Testing
- **Scope:** Verify security measures and data protection
- **Methods:** Vulnerability scanning, penetration testing, code revie
- **Tools:** OWASP ZAP, Nessus, or equivalent security testing tools
- **Coverage:** Authentication, authorization, data encryption, input 

#### Usability Testing
- **Scope:** Validate user experience and interface design
- **Methods:** User testing sessions, accessibility testing
- **Tools:** Browser developer tools, accessibility scanners
- **Criteria:** WCAG 2.1 AA compliance, user satisfaction scores

### 3.3 Test Design Techniques
- **Equivalence Partitioning:** Group similar inputs to reduce test ca
- **Boundary Value Analysis:** Test edge cases and boundary conditions
- **Decision Table Testing:** Test complex business rules and logic
- **State Transition Testing:** Validate system behavior across differ
- **Risk-Based Testing:** Prioritize testing based on risk assessment

### 3.4 Automation Strategy
- **Automation Framework:** Selenium WebDriver with Page Object Model
- **Automation Scope:** Regression tests, smoke tests, API tests
- **Automation Coverage:** 70% of functional tests, 100% of regression
- **Maintenance:** Continuous update and maintenance of automated test

## 4. Test Environment Requirements

### 4.1 Hardware Requirements
- **Application Server:** [Specify server requirements]
- **Database Server:** [Specify database server requirements]
- **Client Machines:** [Specify client system requirements]
- **Network:** [Specify network bandwidth and connectivity requirement
```

```
### 4.2 Software Requirements
- **Operating Systems:** Windows 10/11, macOS, Linux distributions
- **Browsers:** Chrome, Firefox, Safari, Edge (latest versions)
- **Database Management Systems:** [Specify required database systems]
- **Testing Tools:** [List of required testing tools and versions]

### 4.3 Test Data Requirements
- **Data Volume:** Representative sample of production data
- **Data Types:** Test data covering all scenarios and edge cases
- **Data Privacy:** Anonymized production data or synthetic test data
- **Data Refresh:** Weekly refresh cycles for consistent testing

### 4.4 Environment Setup
- **Development Environment:** For unit testing and initial integratio
- **Test Environment:** For system testing and integration testing
- **Staging Environment:** For user acceptance testing and pre-product
- **Production Environment:** For smoke testing and production support

## 5. Test Schedule and Milestones

### 5.1 Test Planning Phase
- **Duration:** 2 weeks
- **Activities:** Test plan creation, test case design, environment se
- **Deliverables:** Test plan, test cases, test environment ready
- **Milestone:** Test planning complete

### 5.2 Test Execution Phase
- **Duration:** 4-6 weeks
- **Activities:** Test execution, defect reporting, regression testing
- **Deliverables:** Test execution reports, defect reports
- **Milestone:** Testing complete

### 5.3 Test Closure Phase
- **Duration:** 1 week
- **Activities:** Test summary, lessons learned, artifact archival
- **Deliverables:** Test closure report, metrics analysis
- **Milestone:** Test closure complete

### 5.4 Critical Dependencies
- **Development Completion:** Testing cannot begin until code is stabl
- **Environment Availability:** Test environments must be ready before
- **Test Data Preparation:** Test data must be available for testing
- **Stakeholder Availability:** Key stakeholders must be available for
```

```
## 6. Test Team Organization

### 6.1 Roles and Responsibilities

#### Test Manager
- **Responsibilities:** Test planning, resource management, stakeholde
- **Skills:** Test management, project management, quality assurance
- **Contact:** [Name and contact information]

#### Senior Test Analyst
- **Responsibilities:** Test design, execution oversight, defect analy
- **Skills:** Test analysis, domain expertise, test automation
- **Contact:** [Name and contact information]

#### Test Automation Engineer
- **Responsibilities:** Automation framework, automated test developme
- **Skills:** Programming, automation tools, CI/CD integration
- **Contact:** [Name and contact information]

#### Performance Test Specialist
- **Responsibilities:** Performance test design, load testing, analysi
- **Skills:** Performance testing tools, system analysis
- **Contact:** [Name and contact information]

### 6.2 Communication Plan
- **Daily Standups:** Daily progress updates with development team
- **Weekly Reports:** Comprehensive status reports to stakeholders
- **Monthly Reviews:** Test metrics review and process improvement
- **Ad-hoc Communication:** Immediate communication for critical issue

### 6.3 Training Requirements
- **Tool Training:** Training on new testing tools and technologies
- **Domain Training:** Business domain knowledge for test analysts
- **Process Training:** Training on testing processes and methodologie

## 7. Entry and Exit Criteria

### 7.1 Entry Criteria

#### Unit Testing
- Code development complete for the unit/module
- Unit test cases reviewed and approved
- Development environment stable and available

#### Integration Testing
- Unit testing completed with acceptable quality
- Integration test environment setup complete
- Test data available for integration scenarios

#### System Testing
- Integration testing completed successfully
- System test environment configured and stable
- All system test cases designed and reviewed

#### User Acceptance Testing
- System testing completed with acceptable defect levels
- UAT environment setup and user access configured
- Business users trained and available for testing

### 7.2 Exit Criteria

#### Unit Testing
- All unit tests executed with 80% pass rate minimum
- Code coverage meets minimum threshold (80%)
- Critical defects resolved

#### Integration Testing
- All integration test cases executed
- 95% pass rate achieved
- High and medium severity defects resolved

#### System Testing
- All system test cases executed
- 95% pass rate achieved
- All high severity defects resolved
- Performance criteria met

#### User Acceptance Testing
- All UAT scenarios executed
- Business acceptance criteria met
- User sign-off obtained

### 7.3 Suspension Criteria
- **Critical Defects:** More than 5 critical defects identified
- **Environment Issues:** Test environment unavailable for more than 1
- **Resource Issues:** Key testing personnel unavailable
- **Quality Issues:** Pass rate below 80% for any test level

### 7.4 Resumption Criteria
- **Defect Resolution:** Critical defects fixed and verified
- **Environment Restoration:** Test environment stable and available
- **Resource Availability:** Required testing personnel available
- **Quality Improvement:** Pass rate improved to acceptable levels

## 8. Test Deliverables

### 8.1 Test Planning Deliverables
- **Test Plan Document:** Comprehensive testing approach and strategy
- **Test Case Specifications:** Detailed test cases for all test level
- **Test Data Specifications:** Test data requirements and preparation
- **Test Environment Setup Guide:** Environment configuration and setu

### 8.2 Test Execution Deliverables
- **Test Execution Reports:** Daily and weekly test execution status
- **Defect Reports:** Detailed defect tracking and analysis
- **Test Coverage Reports:** Coverage metrics and analysis
- **Performance Test Reports:** Performance testing results and analys

### 8.3 Test Closure Deliverables
- **Test Summary Report:** Comprehensive summary of all testing activi
- **Test Metrics Analysis:** Quality metrics and trend analysis
- **Lessons Learned Document:** Process improvements and recommendatio
- **Test Artifact Archive:** Archive of all test artifacts and documen

## 9. Risk Management

### 9.1 Technical Risks

#### Risk: Complex integrations may have undiscovered issues
- **Probability:** Medium
- **Impact:** High
- **Mitigation:** Early integration testing, comprehensive API testing
- **Contingency:** Additional integration testing cycles, vendor suppo

#### Risk: Performance issues under load
- **Probability:** Medium
- **Impact:** High
- **Mitigation:** Performance testing throughout development
- **Contingency:** Performance optimization, infrastructure scaling

### 9.2 Resource Risks

#### Risk: Key testing personnel unavailable
- **Probability:** Low
- **Impact:** High
- **Mitigation:** Cross-training, documentation, backup resources
- **Contingency:** External consultant engagement, scope prioritizatio

#### Risk: Test environment instability
- **Probability:** Medium
- **Impact:** Medium
- **Mitigation:** Environment monitoring, backup environments
- **Contingency:** Alternative testing approaches, extended timeline

### 9.3 Schedule Risks

#### Risk: Development delays impacting testing timeline
- **Probability:** Medium
- **Impact:** High
- **Mitigation:** Risk-based testing, parallel testing activities
- **Contingency:** Scope reduction, additional resources

#### Risk: Extended defect resolution time
- **Probability:** Medium
- **Impact:** Medium
- **Mitigation:** Early defect detection, clear severity criteria
- **Contingency:** Risk-based release decision, phased deployment

### 9.4 Risk Monitoring
- **Risk Register:** Maintain current risk assessment and status
- **Risk Reviews:** Weekly risk assessment and mitigation review
- **Escalation:** Immediate escalation for high-impact risks
- **Communication:** Regular risk communication to stakeholders

## 10. Approval and Sign-off

### 10.1 Review Process
- **Technical Review:** Development lead and architecture team review
- **Business Review:** Product owner and business stakeholders review
- **Quality Review:** QA manager and test team review
- **Management Review:** Project manager and executive sponsor review
```

```
### 10.2 Approval Authority
- **Test Plan Approval:** Project Manager, QA Manager, Development Lea
- **Test Case Approval:** Senior Test Analyst, Business Analyst
- **Test Execution Approval:** Test Manager, Development Lead
- **Test Closure Approval:** Project Manager, Quality Manager

### 10.3 Sign-off Requirements
- **Functional Testing:** Business stakeholder sign-off required
- **Performance Testing:** Technical stakeholder sign-off required
- **Security Testing:** Security officer sign-off required
- **User Acceptance Testing:** End user representative sign-off requir

### 10.4 Change Management
- **Change Request Process:** Formal change request for scope modifica
- **Impact Assessment:** Analysis of change impact on testing activiti
- **Approval Process:** Change approval by project steering committee
- **Communication:** Communication of approved changes to all stakehol

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**Document Control:**
- **Author:** Test Manager
- **Reviewers:** Development Lead, Business Analyst, QA Manager
- **Approval:** Project Manager
- **Next Review Date:** [Date + 1 month]
- **Distribution:** All project team members, key stakeholders

**Revision History:**
| Version | Date | Author | Changes |
|---------|------|--------|---------|
| 1.0 | 08/07/2025 | Test Manager | Initial test plan document |
```