Requirements Management Plan

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Requirements Management Plan

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Requirements Management Plan

Project: ADPA – Advanced Document Processing & Automation Framework
Version: 3.2.0
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Document Owner: ADPA Project Management Office (PMO)
Contact: menno.drescher@gmail.com

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1. Introduction

This Requirements Management Plan defines the approach, processes, tools, and responsibilities for managing requirements throughout the lifecycle of the ADPA (Advanced Document Processing & Automation Framework) project. The plan ensures that all requirements—spanning business, functional, technical, compliance, and integration—are identified, documented, analyzed, tracked, and controlled in alignment with enterprise standards such as BABOK v3, PMBOK 7th Edition, and DMBOK 2.0.

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2. Purpose and Scope

Purpose:
To establish a systematic, standards-driven approach for managing requirements in ADPA, supporting modular enterprise automation for AI-powered document generation, project management, and business analysis.

Scope:

- All business, functional, non-functional, technical, and regulatory requirements for ADPA core, integrations (Confluence, SharePoint, Adobe, etc.), and administrative interfaces.
- Traceability and control across the software development lifecycle (SDLC).
- Compliance with standards (BABOK, PMBOK, DMBOK, GDPR, SOX, PCI DSS, etc.).

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3. Requirements Management Process

3.1 Requirements Elicitation

- **Techniques Used:** Stakeholder interviews, standards mapping (BABOK/PMBOK/DMBOK), AI-driven analysis, competitive benchmarking, and user story workshops.

- **Sources:** Enterprise stakeholders, standards documentation, regulatory mandates, integration partners (Atlassian, Microsoft, Adobe), and end-user feedback.

3.2 Requirements Documentation

- **Artifacts:**
    - Functional Requirements Specifications (FRS)
    - Non-Functional Requirements (NFR) Matrix
    - Standards Compliance Matrices (BABOK, PMBOK, DMBOK)
    - Integration API Specifications (OpenAPI/TypeSpec)
    - User Stories & Use Cases
- **Tools:**
    - ADPA Document Generator (automated, standards-compliant templates)
    - Atlassian Confluence (integration for documentation publishing)
    - SharePoint (document management)

3.3 Requirements Analysis

- **Validation:**
    - Peer review for completeness, consistency, clarity, and testability
    - AI-powered requirements gap and deviation analysis
- **Prioritization:**
    - MoSCoW method (Must have, Should have, Could have, Won't have)
    - Regulatory and business criticality ranking

3.4 Requirements Baseline

- Requirements are baselined at the end of the Analysis phase and prior to each major release (e.g., v3.2.0, v4.0).

- Baselined requirements are versioned and stored in the project's main documentation repository and linked via Confluence.

3.5 Requirements Change Management

- **Process:**
    - Change requests submitted via GitHub Issues (tagged `requirement-change`)
    - Impact analysis performed by business analyst and technical lead
    - Approval by Change Control Board (CCB)
    - Traceability updated in documentation and requirements repository
- **Tools:**
    - GitHub Issues & Discussions
    - Confluence Change Logs
    - Automated notifications for all stakeholders

3.6 Requirements Traceability

- **Mechanism:**
    - Unique ID assigned to each requirement
    - Traceability matrix mapping requirements to design, implementation, test cases, and releases
- **Implementation:**
    - Managed in Confluence and as JSON/YAML artifacts within the codebase
    - Automated validation via ADPA analytics/reporting engine

3.7 Requirements Verification & Validation

- **Verification:**
    - Automated and manual test cases mapped to each requirement

    - CI/CD pipeline integration (unit, integration, and performance testing)
- **Validation:**
    - Stakeholder review cycles
    - Demo sessions using actual generated documents
    - Compliance testing (GDPR, SOX, PCI DSS, etc.)

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4. Requirements Types and Classification

- **Business Requirements:**
    - Enterprise automation for document generation, management, and analysis
    - Multi-framework compliance (BABOK, PMBOK, DMBOK)
- **Functional Requirements:**
    - AI-powered document processing engine
    - REST API and CLI interfaces
    - Integration with Confluence, SharePoint, Adobe Document Services
    - Document template management and publishing
- **Non-Functional Requirements:**
    - Security (enterprise-grade authentication, authorization)
    - Scalability (horizontal scaling, microservices)
    - Performance (fast document generation, low-latency APIs)
    - Reliability and failover (multi-provider AI fallback)
- **Technical Requirements:**
    - Node.js ≥18, TypeScript ≥5.7
    - TypeSpec/OpenAPI API definitions
    - Next.js 14, React 18 for admin interface
    - JSON-based configuration, extensibility to SQL/NoSQL
- **Compliance & Regulatory Requirements:**

    - Basel III, MiFID II, GDPR, SOX, FINRA, PCI DSS, ISO 27001, HIPAA

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5. Roles and Responsibilities

Role	Responsibilities
Product Owner	Approves and prioritizes requirements, signs off on baseline and changes
Business Analyst	Elicits, documents, analyzes, and maintains requirements; ensures standards compliance
Technical Lead	Analyzes technical feasibility, reviews requirements, ensures traceability
QA Lead	Verifies requirements coverage in test cases and validation activities
Developers	Implement requirements, update traceability links, participate in reviews
Integration Partners	Provide interface requirements, review integration and compliance requirements
Change Control Board (CCB)	Approves changes to requirements and manages baseline

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6. Tools and Repositories

- **ADPA Document Generator:** Automated standards-compliant requirements documentation
- **Confluence:** Central documentation and traceability management

- **GitHub:** Source code, issues, change tracking
- **SharePoint:** Enterprise document management
- **TypeSpec/OpenAPI:** API requirements and interface contracts
- **Jira/Azure DevOps (future):** Project and requirements backlog management

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7. Requirements Lifecycle Management

1. **Elicitation:** Initiated at project kick-off and refined for each release cycle.
2. **Documentation:** Maintained in both human-readable (Confluence, Markdown) and machine-readable (JSON/YAML, OpenAPI) formats.
3. **Analysis & Prioritization:** Conducted jointly by business and technical teams.
4. **Baseline:** Set at the conclusion of requirements analysis; changes subject to formal change control.
5. **Implementation:** Requirements traced to commits, build artifacts, and release notes.
6. **Verification & Validation:** Automated and manual testing, stakeholder reviews, and compliance audits.
7. **Change Management:** All changes are impact-assessed, tracked, and communicated.
8. **Archival:** Retired or superseded requirements are archived for audit and historical tracking.

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8. Unique Features of ADPA Requirements Management

- **Standards-Driven Templates:** Automated generation of requirements documentation compliant with BABOK, PMBOK, and DMBOK.
- **Multi-Provider AI Integration:** Requirements can evolve with advances in AI provider capabilities; flexibility built into requirements baseline.

- **API-First, Microservices-Oriented:** All requirements for service interfaces are specified upfront (TypeSpec/OpenAPI).
- **Automated Traceability:** Built-in analytics and reporting modules ensure ongoing requirements-to-implementation traceability.
- **Enterprise Integration:** Requirements for third-party and internal integrations (Confluence, SharePoint, Adobe, Active Directory, etc.) tracked across their full lifecycle.
- **Regulatory and Security Focus:** Requirements explicitly mapped to compliance obligations and security standards.
- **Collaboration-Ready:** Support for multi-user, real-time collaboration, versioning, and approval workflows in requirements processes.

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9. Monitoring and Reporting

- **Dashboards:** Admin interface and Confluence dashboards to monitor coverage, traceability, and open changes.
- **Notifications:** Automated email and in-app notifications for baselines, changes, and validation events.
- **Auditing:** Complete audit trail of requirements creation, changes, validation, and archival.

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10. Maintenance and Continuous Improvement

- **Routine Reviews:** Scheduled requirements reviews with stakeholders each quarter or major release.
- **Feedback Loops:** Solicited from end users, integration partners, and auditors.
- **Continuous Improvement:** Requirements management processes are refined based on retrospectives and lessons learned.

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11. References

- **BABOK v3**, **PMBOK 7th Edition**, **DMBOK 2.0**
- ADPA Documentation
- MIT License
- Contributing Guide

This Requirements Management Plan ensures that ADPA delivers secure, standards-compliant, and enterprise-ready automation capabilities through disciplined, transparent, and auditable requirements management from inception through delivery and beyond.
