PARADIN ENVIROTECH

Software Requirements Specification

ShieldCert System - Complete ITAD Management Platform

Version: 1.0

Date: 2025-12-22

Status: Draft

https://www.securewithpaladin.com

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1 Document Information

Field	Value
Project Name	ShieldCert System - Complete ITAD Management Platform
Version	1.0
Date	2025-12-22
Project Manager	TBD
Tech Lead	TBD
Qa Lead	TBD
Platforms	['Web', 'Mobile', 'Cloud']
Document Status	Draft
Client	Paladin Envirotech
Document Code	SHIELDCERT-MASTER-122025

2 Project Overview

2.1 What Are We Building

2.1.1 System Function

A comprehensive IT Asset Disposition (ITAD) management platform that supports the secure, compliant, and environmentally responsible management of IT assets throughout the disposition lifecycle, including asset intake, tracking, data sanitization, auditing, recycling, resale, and final settlement. The system manages the complete workflow from account management and inbound orders through receiving, auditing, processing, sales, and shipping with full traceability and compliance reporting.

2.1.2 Users

- Account Managers: Client relationship management, SOW creation, order management
- Operations Staff: Receiving, auditing, processing, inventory management
- Value Recovery Team: Sales order creation, pricing, asset valuation
- Warehouse Operators: Physical asset handling, pallet management, shipping
- Model Management Team: Product catalog management, model approval
- Customer Service: Invoice creation, client communication
- Administrators: User management, system configuration, master data
- Executives: Reporting, analytics, business intelligence

2.1.3 Problem Solved

Eliminates manual processes in IT asset disposition: paper-based tracking causing asset loss and compliance issues, lack of real-time visibility into asset status and location, manual data entry leading to errors and inefficiency, fragmented systems preventing end-to-end traceability, compliance risks from inadequate audit trails, revenue leakage from poor asset valuation and tracking, and inability to provide clients with accurate, timely reporting on asset disposition status.

2.1.4 Key Success Metric

Complete digital transformation of ITAD operations achieving: 99% asset tracking accuracy, 100% compliance with data protection regulations, 50% reduction in processing time, 30% increase in asset recovery value, real-time visibility across all processes, automated reporting and invoicing, and seamless integration with accounting systems.

2.2 Scope

2.2.1 In Scope

- Complete account and client management system
- Statement of Work (SOW) management with SLA tracking
- Inbound order management and receiving processes
- Asset auditing and data capture with barcode/QR scanning
- Inventory management and warehouse operations
- Sales order creation and outbound shipping
- Invoice generation and accounting integration
- User management and role-based access control
- Comprehensive audit trails and compliance reporting
- Master data management and system configuration
- NetSuite integration for accounting and invoicing

2.2.2 Out Of Scope

- Physical data destruction equipment integration (manual process)
- Third-party logistics provider systems (API integration only)
- Client portal for external access (Phase 2)
- Advanced analytics and business intelligence dashboards (Phase 2)
- Mobile applications for field operations (Phase 2)
- Integration with environmental compliance systems (manual reporting)

3 System Modules

3.1 Account Management

3.1.1 Module Name

Account Management Module

3.1.2 Module Code

ACCOUNT_MGMT

3.1.3 Document File

srs_account_management.json

3.1.4 Description

Complete client account lifecycle management including account creation, contact management, pickup addresses, document storage, and SOW configuration

3.1.5 Key Features

- Account dashboard with filtering and export
- Account creation and approval workflow
- Contact management with multiple contacts per account
- Pickup address management with responsible contacts
- Document upload and management
- Statement of Work (SOW) creation and management
- Service fee configuration and pricing
- SLA management and tracking

3.1.6 Integration Points

- Inbound Orders
- Sales Orders

- Invoicing
- NetSuite

3.1.7 Status

Complete

3.2 Model Management

3.2.1 Module Name

Model Management Module

3.2.2 Module Code

MODEL_MGMT

3.2.3 Document File

srs_model_management.json

3.2.4 Description

Product catalog management including model number creation, approval workflow, and substitute model handling

3.2.5 Key Features

- Model number creation and approval workflow
- Product type and manufacturer association
- Image upload and management
- Model search and filtering
- Rejected model substitution process
- Weight and description management
- Tech line classification

3.2.6 Integration Points

- Asset Auditing
- Sales Orders

- Inventory

3.2.7 Status

Complete

3.3 Warehouse Management

3.3.1 Module Name

Warehouse and Location Management

3.3.2 Module Code

WAREHOUSE_MGMT

3.3.3 Document File

srs_warehouse_management.json

3.3.4 Description

Organization, warehouse, and location hierarchy management with processing stage tracking

3.3.5 Key Features

- Organization management
- Warehouse creation and configuration
- Location and sub-location management
- Processing stage assignment
- Pallet management and tracking
- Location-based inventory tracking

3.3.6 Integration Points

- All operational modules

3.3.7 Status

Complete

3.4 Inbound Operations

3.4.1 Module Name

Inbound Operations Module

3.4.2 Module Code

INBOUND_OPS

3.4.3 Document File

srs_inbound_operations.json

3.4.4 Description

Complete inbound order lifecycle from creation through receiving and initial processing

3.4.5 Key Features

- Inbound order dashboard and creation
- Pickup information management
- SLA tracking and management
- Receiving workflow with pallet creation
- Order status management
- Processing instruction management

3.4.6 Integration Points

- Account Management
- Warehouse Management
- Asset Auditing

3.4.7 Status

Complete

3.5 Asset Auditing

3.5.1 Module Name

Asset Auditing and Processing Module

3.5.2 Module Code

ASSET_AUDIT

3.5.3 Document File

srs_asset_auditing.json

3.5.4 Description

Comprehensive asset data capture, auditing, grading, and processing workflows

3.5.5 Key Features

- Asset data capture with barcode scanning
- Serial number and client asset tag recording
- Product status management with decision trees
- Parts harvesting and component tracking
- Asset grading and condition assessment
- Data safety verification and wiping
- Inventory movement and status updates

3.5.6 Integration Points

- Model Management
- Warehouse Management
- Sales Orders

3.5.7 Status

Complete

3.6 Sales Operations

3.6.1 Module Name

Sales and Outbound Operations Module

3.6.2 Module Code

SALES_OPS

3.6.3 Document File

srs_sales_operations.json

3.6.4 Description

Sales order creation, pricing, outbound shipping, and fulfillment processes

3.6.5 Key Features

- Sales order dashboard and creation
- Product line management with pricing
- Asset-specific sales with bulk upload
- Purchase price assignment for buyback/revenue share
- Outbound order creation and fulfillment
- Shipping workflow with carrier integration
- Bill of lading and packing list generation

3.6.6 Integration Points

- Asset Auditing
- Warehouse Management
- Invoicing
- NetSuite

3.6.7 Status

Complete

3.7 Invoicing Integration

3.7.1 Module Name

Invoicing and NetSuite Integration Module

3.7.2 Module Code

INVOICE_INTEG

3.7.3 Document File

srs_invoicing_integration.json

3.7.4 Description

Invoice creation, adjustment, and automated NetSuite integration for accounting

3.7.5 Key Features

- Automated invoice calculation from service fees
- Manual invoice adjustments and additional fees
- NetSuite API integration for invoice creation
- Shipment data transmission to accounting
- Invoice status tracking and error handling
- Audit trail for all financial transactions

3.7.6 Integration Points

- Account Management
- Sales Operations
- NetSuite API

3.7.7 Status

Complete

3.8 System Administration

3.8.1 Module Name

System Administration Module

3.8.2 Module Code

SYS_ADMIN

3.8.3 Document File

srs_system_administration.json

3.8.4 Description

User management, role-based access control, master data management, and system configuration

3.8.5 Key Features

- User creation and management
- Role and permission management
- Master data configuration (dropdowns, reference data)
- System audit trails and logging
- Access control enforcement
- Configuration management

3.8.6 Integration Points

- All modules - foundational security and configuration

3.8.7 Status

Complete

4 Integration Architecture

4.1 Description

The ShieldCert System operates as a unified ITAD platform with three integration layers

4.2 Layers

4.2.1 Data Layer

4.2.1.1 Description

Centralized data management with real-time synchronization

4.2.1.2 Components

- PostgreSQL database with ACID compliance
- RESTful API framework for service communication
- Real-time data synchronization across modules
- Audit trail and change tracking
- Data validation and integrity enforcement

4.2.2 Business Layer

4.2.2.1 Description

Core business logic and workflow management

4.2.2.2 Components

- SOW-driven business rules engine
- SLA tracking and alerting system
- Asset status workflow management
- Decision tree processing for client-specific rules
- Automated calculations for pricing and revenue share

4.2.3 Presentation Layer

4.2.3.1 Description

User interfaces and external integrations

4.2.3.2 Components

- Responsive web application for all user roles
- Dashboard views for different operational areas
- Barcode/QR code scanning interfaces
- Report generation and export functionality
- NetSuite API integration for accounting

4.3 Api Framework

4.3.1 Architecture

RESTful APIs with JSON data format

4.3.2 Authentication

JWT-based authentication with role-based access control

4.3.3 Security

TLS 1.3 encryption, API rate limiting, input validation

4.3.4 Documentation

OpenAPI 3.0 specifications for all endpoints

4.3.5 Versioning

Semantic versioning with backward compatibility

5 Cross Cutting Concerns

5.1 Security

5.1.1 Authentication

JWT-based authentication with session management

5.1.2 Authorization

Role-based access control (RBAC) with granular permissions

5.1.3 Encryption

AES-256 at rest, TLS 1.3 in transit

5.1.4 Audit Trail

Comprehensive logging of all system actions and data changes

5.1.5 Compliance

Data protection regulations, environmental compliance tracking

5.1.6 Privacy

Client data isolation, secure document storage

5.2 Performance

5.2.1 Response Time

< 2 seconds for standard operations, < 5 seconds for complex reports

5.2.2 Throughput

Support 100+ concurrent users across all modules

5.2.3 Availability

99.9% uptime for production operations

5.2.4 Scalability

Microservices architecture supporting horizontal scaling

5.2.5 Batch Processing

Support for bulk asset processing and data imports

5.3 Data Governance

5.3.1 Ownership

Clear data ownership by business functions

5.3.2 Quality

Automated validation, duplicate detection, data cleansing

5.3.3 Retention

7 years transaction data, 3 years operational logs

5.3.4 Archival

Automated archival to cold storage after 2 years

5.3.5 Backup

Daily incremental, weekly full, 90-day retention

5.3.6 Disaster Recovery

RPO 4 hours, RTO 8 hours for critical systems

5.4 Monitoring

5.4.1 System Health

24/7 monitoring with automated alerting

5.4.2 Performance Metrics

Real-time dashboards for all key metrics

5.4.3 User Analytics

Usage patterns, feature adoption, performance tracking

5.4.4 Security Monitoring

Intrusion detection, anomaly alerts, access monitoring

5.4.5 Business Metrics

KPIs aligned with ITAD operational objectives

6 Deployment Strategy

6.1 Phased Approach

6.1.1 Phase 1

6.1.1.1 Name

Foundation (Months 1-3)

6.1.1.2 Modules

- Account Management
- Model Management
- System Administration

6.1.1.3 Objectives

Establish core data management, user access, and client onboarding

6.1.1.4 Success Criteria

All accounts migrated, users trained, basic workflows operational

6.1.2 Phase 2

6.1.2.1 Name

Operations (Months 4-6)

6.1.2.2 Modules

- Warehouse Management
- Inbound Operations
- Asset Auditing

6.1.2.3 Objectives

Deploy core operational workflows for asset intake and processing

6.1.2.4 Success Criteria

All receiving and auditing processes digital, asset tracking 99%+

6.1.3 Phase 3

6.1.3.1 Name

Sales & Integration (Months 7-9)

6.1.3.2 Modules

- Sales Operations
- Invoicing Integration

6.1.3.3 Objectives

Complete sales workflow and accounting integration

6.1.3.4 Success Criteria

End-to-end digital workflow, NetSuite integration operational

6.2 Pilot Locations

6.2.1 Primary Facility

Main ITAD processing facility for initial deployment

6.2.2 User Groups

Account managers, operations staff, value recovery team (20-30 users)

6.2.3 Asset Volume

1000+ assets per month for testing scalability

7 Training Change Management

7.1 Stakeholder Engagement

7.1.1 Early Involvement

User representatives in design and testing process

7.1.2 Champion Program

Identify and train super-users in each department

7.1.3 Feedback Loops

Regular user feedback sessions and iterative improvements

7.2 Training Program

7.2.1 Account Managers

2-day training on account setup, SOW management, order creation

7.2.2 Operations Staff

3-day training on receiving, auditing, inventory management

7.2.3 Value Recovery

2-day training on sales orders, pricing, shipping workflows

7.2.4 Warehouse Operators

1-day training on scanning, pallet management, basic operations

7.2.5 Administrators

3-day training on user management, system configuration, troubleshooting

7.3 Documentation

7.3.1 User Guides

Role-based user manuals with screenshots and workflows

7.3.2 Video Tutorials

Short videos for common tasks and troubleshooting

7.3.3 Quick Reference

Laminated cards for barcode scanning and common operations

7.3.4 Technical Documentation

System architecture, API docs, deployment procedures

7.3.5 Sops

Standard Operating Procedures for all ITAD processes

8 Risks Assumptions

8.1 Strategic Risks

Risk	Mitigation
Data migration complexity from legacy systems	Phased migration approach, data validation tools, parallel running period
User adoption resistance due to change from manual processes	Comprehensive training, change management, demonstrating efficiency gains
NetSuite integration complexity and API limitations	Early integration testing, fallback manual processes, API monitoring
Barcode scanning hardware compatibility issues	Hardware testing, multiple vendor options, manual entry fallback
Compliance audit failures due to incomplete audit trails	Comprehensive logging, regular compliance reviews, external audit preparation

8.2 Key Assumptions

- Management committed to digital transformation and process changes
- Staff willing to adopt new technology with appropriate training
- NetSuite API access and permissions available for integration
- Existing hardware (scanners, computers) compatible or can be upgraded
- Network infrastructure adequate for real-time operations
- Client SOWs can be standardized and digitized
- Current manual processes can be replicated digitally without loss of functionality

9 Success Metrics

9.1 Operational Efficiency

9.1.1 Asset Tracking

99%+ accuracy in asset location and status tracking

9.1.2 Processing Time

50% reduction in average asset processing time

9.1.3 Data Entry Errors

90% reduction through automated scanning and validation

9.1.4 Order Processing

75% faster order creation and management

9.1.5 Inventory Accuracy

99%+ accuracy in inventory counts and locations

9.2 Compliance Quality

9.2.1 Audit Trail

100% complete audit trails for all asset transactions

9.2.2 Sla Compliance

95%+ SLA adherence across all client agreements

9.2.3 Data Security

Zero data breaches or compliance violations

9.2.4 Reporting Accuracy

99%+ accuracy in client reporting and invoicing

9.3 Business Impact

9.3.1 Revenue Recovery

30% increase in asset recovery value through better tracking

9.3.2 Cost Reduction

40% reduction in administrative overhead

9.3.3 Client Satisfaction

95%+ client satisfaction with reporting and transparency

9.3.4 Processing Capacity

50% increase in asset processing capacity

10 Sign Off

10.1 Approval

Role	Name	Signature	Date

10.2 Document History

Version	Date	Changes Made	Changed By
1.0	2025-12-22	Initial master document consolidating all ShieldCert System SRS modules based on Paladin Envirotech requirements	SRS Development Team

11 Appendices

11.1 Module Documents

Module	File	Html	Pdf
Account Management	srs_account_management.json	srs_account_management.html	srs_account_mar
Model Management	srs_model_management.json	srs_model_management.html	srs_model_mana
Warehouse Management	srs_warehouse_management.json	srs_warehouse_management.html	srs_warehouse_r
Inbound Operations	srs_inbound_operations.json	srs_inbound_operations.html	srs_inbound_ope
Asset Auditing	srs_asset_auditing.json	srs_asset_auditing.html	srs_asset_auditir
Sales Operations	srs_sales_operations.json	srs_sales_operations.html	srs_sales_operati
Invoicing Integration	srs_invoicing_integration.json	srs_invoicing_integration.html	srs_invoicing_in
System Administration	srs_system_administration.json	srs_system_administration.html	srs_system_adm

11.2 Acronyms

11.2.1 Itad

IT Asset Disposition

11.2.2 Sow

Statement of Work

11.2.3 Sla

Service Level Agreement

11.2.4 Rbac

Role-Based Access Control

11.2.5 Api

Application Programming Interface

11.2.6 Jwt

JSON Web Token

11.2.7 Tls

Transport Layer Security

11.2.8 Acid

Atomicity, Consistency, Isolation, Durability

11.2.9 Bol

Bill of Lading

11.2.10 Qr

Quick Response

11.2.11 Csv

Comma-Separated Values

11.2.12 Json

JavaScript Object Notation

11.2.13 Rest

Representational State Transfer

11.2.14 Crud

Create, Read, Update, Delete

11.2.15 Ui

User Interface

11.2.16 Ux

User Experience