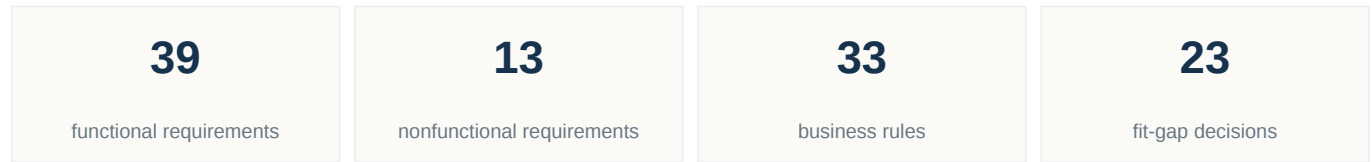


# Business Requirements & Solution Design

## Field Service Scheduling & Dispatch Implementation

Portfolio project based on Juniper Vale Home Services, a fictional field-service company. Business data is synthetic.



## Design objective

Turn the discovery findings into clear system behavior, business rules, configuration decisions, access rules, interface expectations, and acceptance criteria for Release 1.

## Core functional areas

| Area               | Key requirements                                                                                                        |
|--------------------|-------------------------------------------------------------------------------------------------------------------------|
| Intake             | Capture customer, location, service, window, priority and readiness fields; show missing information before scheduling. |
| Scheduling         | Use active status, skill, territory, availability and capacity to determine eligible technicians.                       |
| Dispatch           | Record publication state, post-publication change reason, protected work and authorized overrides.                      |
| Inventory          | Show critical-item readiness and stale information before dispatch decisions.                                           |
| Field execution    | Use clear statuses and service-specific completion evidence.                                                            |
| Exceptions         | Record type, owner, status, due/escalation time and final disposition.                                                  |
| Customer follow-up | Create owned follow-up with due time and escalation without silently resetting the clock.                               |
| Reporting          | Capture consistent fields for weekly KPI reporting and later analytics.                                                 |

## Nonfunctional needs

Role-based access, reasonable response time for common actions, reliable retry/fallback behavior for field connectivity, audit history, clear error states, data retention, accessibility, and supportable configuration are part of the design baseline.

## Business rules

| Rule area     | Working rule                                                                                                           |
|---------------|------------------------------------------------------------------------------------------------------------------------|
| Eligibility   | A technician must be active and meet skill, territory and availability requirements before capacity is considered.     |
| Capacity      | The standard dispatchable day is modeled at 420 minutes. Material exceptions require authorized override and a reason. |
| Route changes | Post-publication changes require a reason and remain visible in history.                                               |
| Inventory     | Critical items can produce READY, WARNING, HOLD or STALE REVIEW conditions based on quantity and source freshness.     |
| Follow-up     | Urgent: 2 business hours; Service Recovery: by noon next business day; Routine: within 2 business days.                |
| Closeout      | Required evidence depends on service type and must be complete before normal completion.                               |
| Permissions   | Users receive the minimum access needed for their role; high-impact overrides stay with named roles.                   |

## System landscape

Release 1 uses a vendor-neutral field-service platform as the operational system for work orders, scheduling, dispatch, field completion and exceptions. CRM, route planning, QuickBooks Online, notifications, analytics and identity remain separate systems with defined data exchanges.

### Design approach

Prefer standard configuration and supported data exchange patterns. Use change control when a requirement would add unnecessary customization, replace a retained system without a business case, or create a dependency that is harder to support than the value it provides.

# Acceptance and traceability

Each material requirement is linked back to its source and forward to the design/configuration response and acceptance method. UAT, data validation, security review, interface checks, and training readiness use the same requirement IDs so decisions can be traced without rewriting the story at each stage.

| Acceptance type | Examples                                                                                       |
|-----------------|------------------------------------------------------------------------------------------------|
| UAT             | Intake completeness, technician eligibility, route changes, exceptions, closeout and follow-up |
| Data            | Source-to-target mapping, critical reference integrity, reconciliation                         |
| Security        | Role and permission checks, negative access scenarios                                          |
| Interfaces      | Supported exchange, validation, failure handling and ownership                                 |
| Operations      | Capacity/readiness rules and weekly reporting reproducibility                                  |

## Design result

The design baseline is ready for project configuration, data work, UAT preparation, training planning and the delivery controls that follow.