PORTFOLIO CASE STUDY ·
REVENUE OPERATIONS ARCHITECTURE

AI Customer Journey Operations & Recovery System

An AI-Assisted Operational Platform for Lifecycle Monitoring, Revenue Leakage Detection, Recovery Management, Escalation Governance, and Outcome Tracking.

- Revenue Operations Architecture
- Lifecycle Management Platform
- AI-Assisted Recovery & Escalation System

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PLATFORM OVERVIEW

01 Opportunity Intake Engine
Custom HTML/JS form with webhook routing and duplicate detection

02 Leakage Detection Engine
Continuous monitoring across 5 lifecycle stages with event creation

03 AI Decision Intelligence
Context-aware scoring, strategy selection, and routing logic

04 Recovery Execution Engine
AI-generated outreach with attempt tracking and status management

05 Escalation & Notification
Human-in-the-loop routing with automated stakeholder alerts

06 Outcome & Closed-Loop Sync
Resolution classification with full upstream record synchronization

Executive Summary

Business context and platform rationale

BUSINESS CONTEXT

Organizations frequently lose revenue because customer journeys stall at critical lifecycle stages – often without detection, intervention, or structured recovery.

COMMON LEAKAGE POINTS

- **No Response After Qualification**
  Lead engagement drops with no follow-up sequence
- **Consultation Delays**
  Scheduled calls missed with no rescheduling workflow
- **Proposal Inactivity**
  Sent proposals ignored beyond acceptable review windows
- **Onboarding Friction**
  Initiated onboarding stalls due to delayed task completion
- **Engagement Decline**
  Active accounts show dropping activity scores without alerts

PLATFORM RESPONSE

The AI Customer Journey Operations & Recovery System was designed to address these failure points through multi-layer operational infrastructure.

PLATFORM CAPABILITIES

- Lifecycle monitoring across all customer journey stages
- Automated leakage detection with event record creation
- AI-assisted decision intelligence and strategy selection
- Structured recovery workflow execution with attempt tracking
- Human escalation routing with stakeholder notification
- Outcome classification and closed-loop record synchronization

BUSINESS PROBLEM

Business Problem

Why revenue leakage persists in most organizations

Revenue leakage occurs because lifecycle monitoring is fragmented across tools, processes, and teams. Without a centralized operational system, opportunities become inactive without detection, intervention, or resolution – representing quantifiable, unrecovered pipeline loss.

No Operational Visibility

Lifecycle stages exist in silos. No central system tracks where each opportunity stands in real time.

No Leakage Detection

Stalled opportunities go unnoticed. No automated monitoring identifies when journeys stop progressing.

No Recovery Workflows

Teams rely on manual follow-up. No structured process exists to re-engage inactive opportunities at scale.

No Escalation Governance

High-priority cases lack routing protocols. Critical accounts are not escalated to the appropriate owner.

No Outcome Tracking

Resolution results are not captured. Teams cannot measure what worked, what failed, or why.

No Closed-Loop Feedback

Even when actions are taken, results are not synchronized back into the system of record for visibility.

The absence of any one of these components creates systemic pipeline leakage. This platform addresses all six.

SYSTEM OBJECTIVES

System Objectives

What the platform was designed to accomplish

01

Detect Customer Journey Leakage

Continuously evaluate lifecycle stage progression across all monitored opportunities. Generate structured leakage event records when stall conditions are identified.

02

Recover At-Risk Opportunities

Execute AI-selected recovery strategies with contextual messaging. Track attempt counts, channel selection, and execution status per recovery action.

03

Escalate Critical Cases

Route high-confidence escalation cases to human reviewers. Generate escalation briefs, assign ownership, and trigger stakeholder notifications automatically.

04

Track Resolution Outcomes

Classify final states as Recovered, Escalated, or Maximum Attempts Reached. Write structured outcome records linked to originating leakage events.

05

Maintain Lifecycle Visibility

Keep Customer Journey Records current across all operational states. Ensure stakeholders have real-time visibility into opportunity health and recovery progress.

06

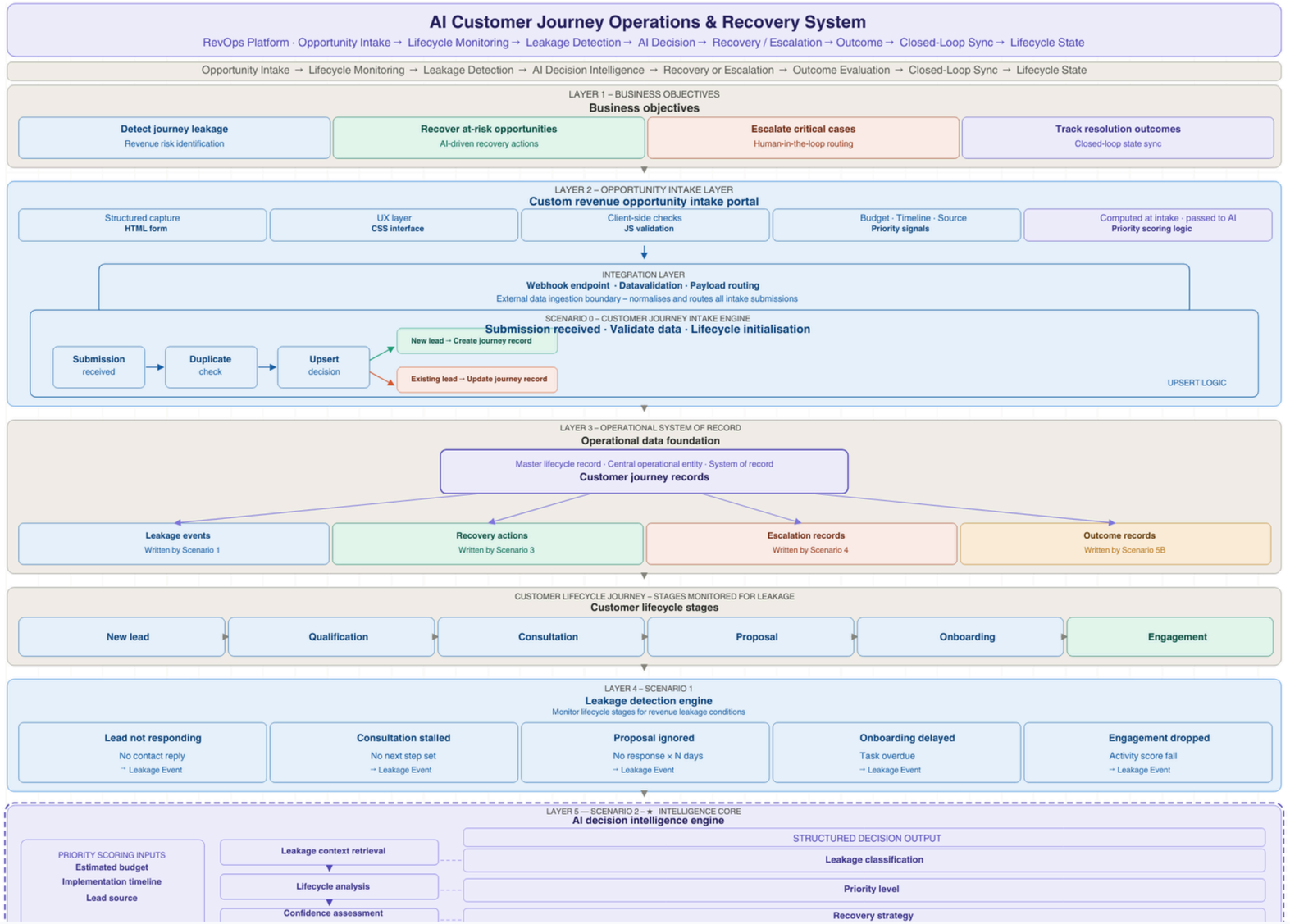
Enable Closed-Loop Synchronization

Propagate outcome data back to all upstream records: CJR, Leakage Events, Recovery Actions, and Escalation Records. No orphaned data, no unresolved states.

SYSTEM ARCHITECTURE

System Architecture Overview

Multi-layer operational platform – seven integrated scenarios



SCENARIO MAP

- **S0** Customer Journey Intake Engine
- **S1** Leakage Detection Engine
- **S2** AI Decision Intelligence Engine
- **S3** Recovery Execution Engine
- **S4** Escalation Management Engine
- **S5A** Human Escalation Notification
- **S5B** Outcome Evaluation Engine

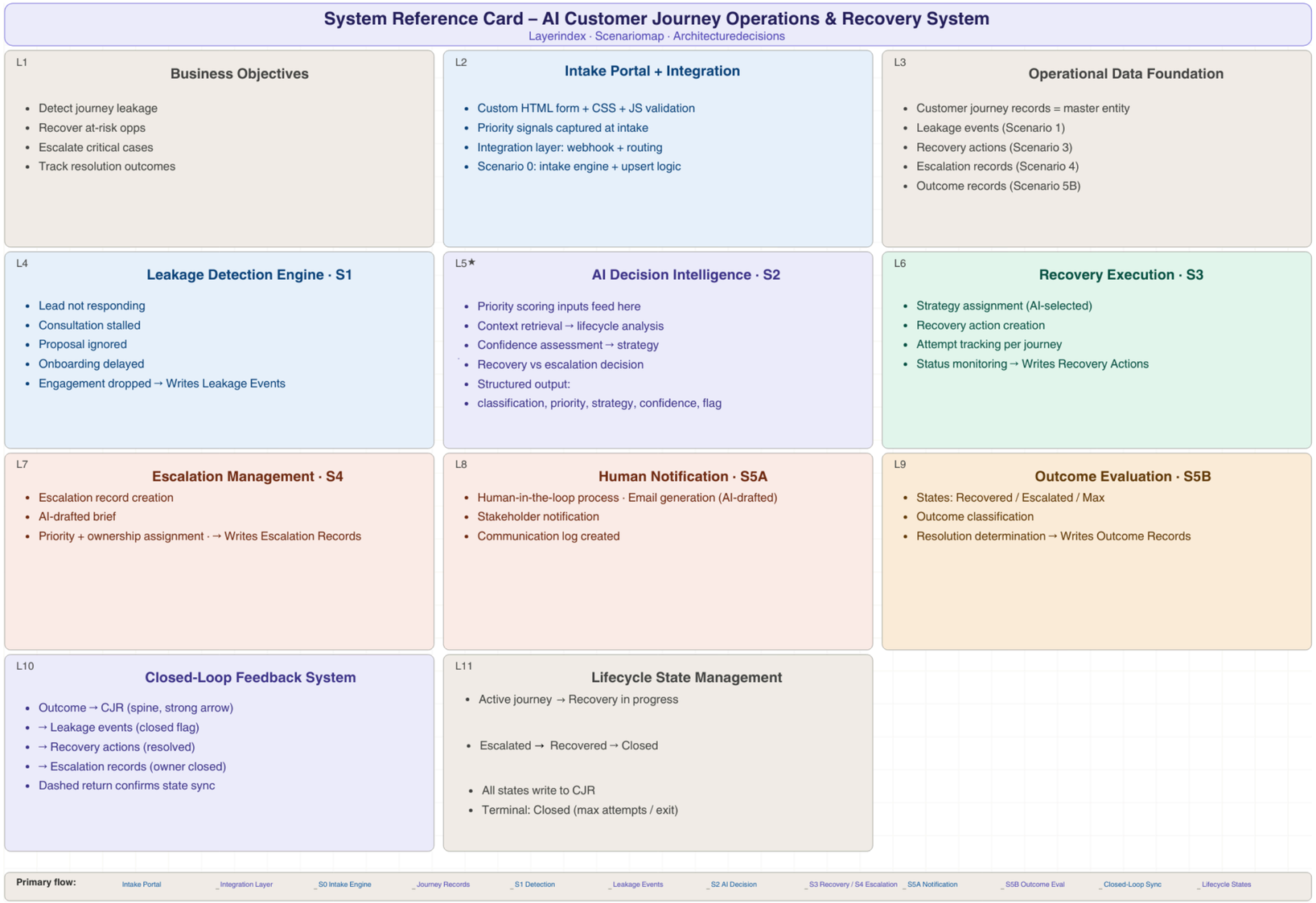
TECHNOLOGY STACK

Make · Airtable · Webhooks · AI Agents · HTML/CSS/JS

SYSTEM ARCHITECTURE – DETAIL VIEW

Architecture Detail: Layer Index & Decision Flow

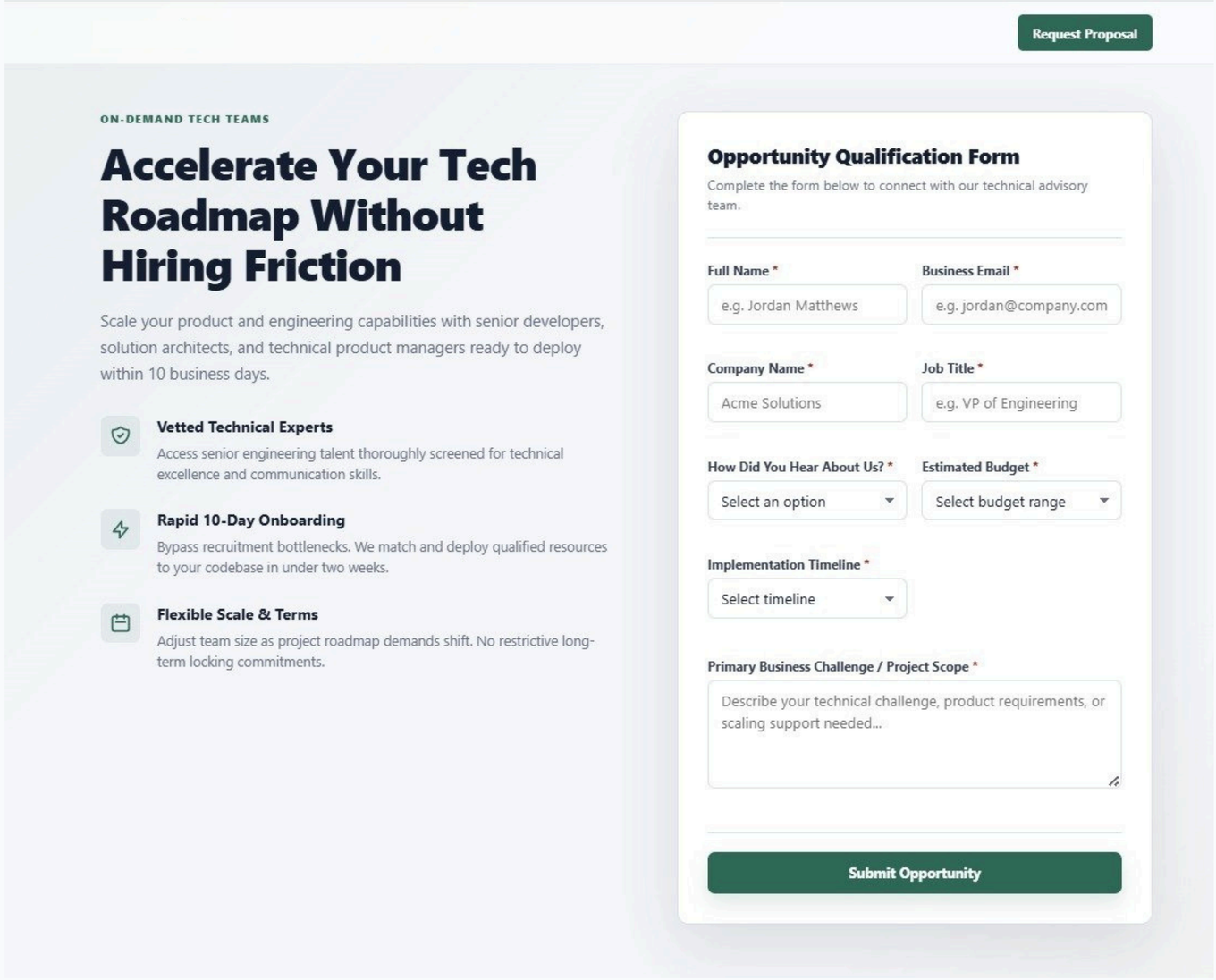
Operational layers, record relationships, and state transitions



SCENARIO 0 – OPPORTUNITY INTAKE LAYER

Opportunity Intake Layer

Custom intake portal, webhook integration, and lifecycle record initialization



INTAKE FORM DESIGN

A custom HTML, CSS, and JavaScript opportunity intake portal captures structured submission data. The form is embedded within a branded landing page and connected to the automation layer via a webhook.

DATA CAPTURED AT INTAKE

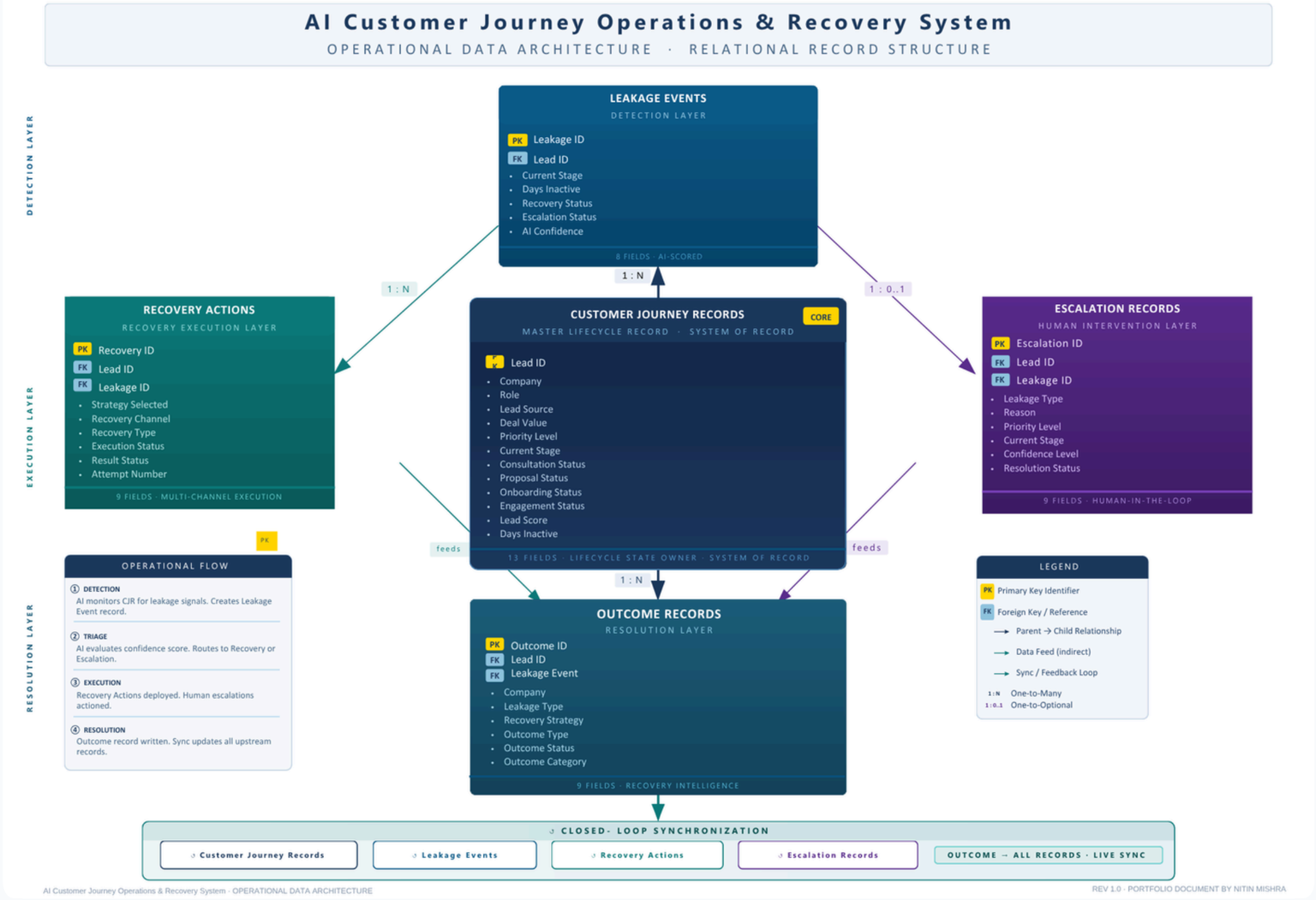
- Full Name & Business Email
- Company Name & Job Title
- Lead Source (How Did You Hear About Us)
- Estimated Budget Range
- Implementation Timeline
- Primary Business Challenge / Project Scope

INTAKE ENGINE LOGIC

- Validates payload completeness on submission
- Checks for existing records (duplicate detection)
- Creates new CJR or updates existing lifecycle record
- Initializes operational tracking fields

Operational Data Architecture

Five relational record structures forming the operational system of record



Architecture Highlights

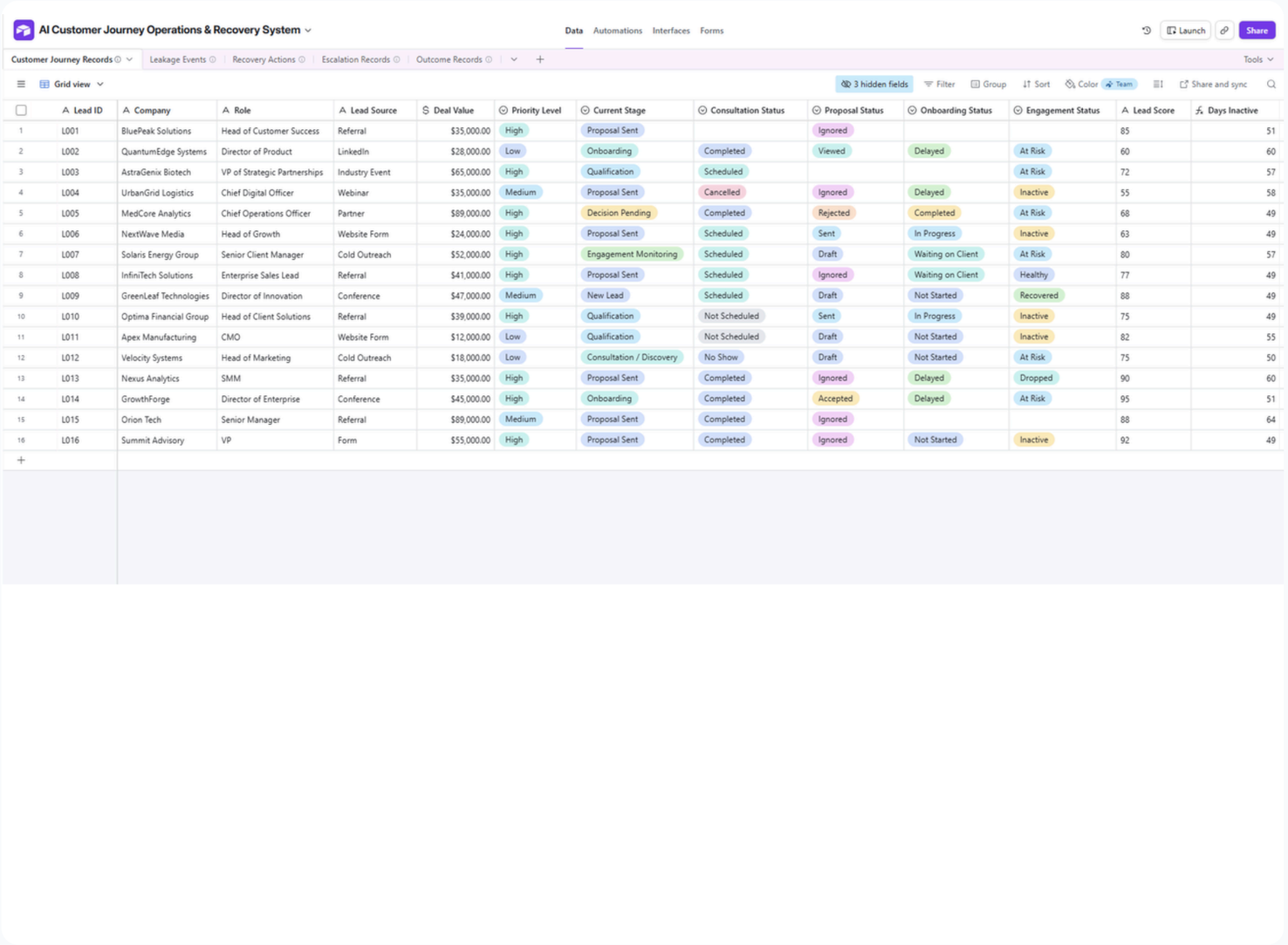
A custom HTML, CSS, and JavaScript opportunity intake portal captures structured submission data. The form is embedded within a branded landing page and connected to the automation layer via a webhook.

- Customer Journey Records = System of Record
- Lead ID = Primary Relationship Identifier
- Leakage ID = Secondary Relationship Identifier
- Recovery & Escalation Paths Tracked Independently
- Outcome Records Enable Closed-Loop Synchronization

OPERATIONAL RECORD STRUCTURE

Operational Record Structure

Airtable-based relational data model with five operational tables



	Lead ID	Company	Role	Lead Source	Deal Value	Priority Level	Current Stage	Consultation Status	Proposal Status	Onboarding Status	Engagement Status	Lead Score	Days Inactive
1	L001	BluePeak Solutions	Head of Customer Success	Referral	$35,000.00	High	Proposal Sent		Ignored			85	51
2	L002	QuantumEdge Systems	Director of Product	LinkedIn	$28,000.00	Low	Onboarding	Completed	Viewed	Delayed	At Risk	60	60
3	L003	AstraGenix Biotech	VP of Strategic Partnerships	Industry Event	$65,000.00	High	Qualification	Scheduled			At Risk	72	57
4	L004	UrbanGrid Logistics	Chief Digital Officer	Webinar	$35,000.00	Medium	Proposal Sent	Cancelled	Ignored	Delayed	Inactive	55	58
5	L005	MedCore Analytics	Chief Operations Officer	Partner	$89,000.00	High	Decision Pending	Completed	Rejected	Completed	At Risk	68	49
6	L006	NextWave Media	Head of Growth	Website Form	$24,000.00	High	Proposal Sent	Scheduled	Sent	In Progress	Inactive	63	49
7	L007	Solaris Energy Group	Senior Client Manager	Cold Outreach	$52,000.00	High	Engagement Monitoring	Scheduled	Draft	Waiting on Client	At Risk	80	57
8	L008	InfiniTech Solutions	Enterprise Sales Lead	Referral	$41,000.00	High	Proposal Sent	Scheduled	Ignored	Waiting on Client	Healthy	77	49
9	L009	GreenLeaf Technologies	Director of Innovation	Conference	$47,000.00	Medium	New Lead	Scheduled	Draft	Not Started	Recovered	88	49
10	L010	Optima Financial Group	Head of Client Solutions	Referral	$39,000.00	High	Qualification	Not Scheduled	Sent	In Progress	Inactive	75	49
11	L011	Apex Manufacturing	CMO	Website Form	$12,000.00	Low	Qualification	Not Scheduled	Draft	Not Started	Inactive	82	55
12	L012	Velocity Systems	Head of Marketing	Cold Outreach	$18,000.00	Low	Consultation / Discovery	No Show	Draft	Not Started	At Risk	75	50
13	L013	Nexus Analytics	SMM	Referral	$35,000.00	High	Proposal Sent	Completed	Ignored	Delayed	Dropped	90	60
14	L014	GrowthForge	Director of Enterprise	Conference	$45,000.00	High	Onboarding	Completed	Accepted	Delayed	At Risk	95	51
15	L015	Orion Tech	Senior Manager	Referral	$89,000.00	Medium	Proposal Sent	Completed	Ignored			88	64
16	L016	Summit Advisory	VP	Form	$55,000.00	High	Proposal Sent	Completed	Ignored	Not Started	Inactive	92	49

CORE **Customer Journey Records**

Master Lifecycle Record

System of record. 13 operational fields. Central entity linking all downstream records.

DETECTION **Leakage Events**

Risk Detection Layer

Written by Scenario 1. Contains leakage type, stage, days inactive, AI confidence score.

EXECUTION **Recovery Actions**

Recovery Execution Layer

Written by Scenario 3. Tracks strategy, channel, attempt number, and execution status.

ESCALATION **Escalation Records**

Human Intervention Layer

Written by Scenario 4. Captures escalation reason, priority, confidence, and owner.

RESOLUTION **Outcome Records**

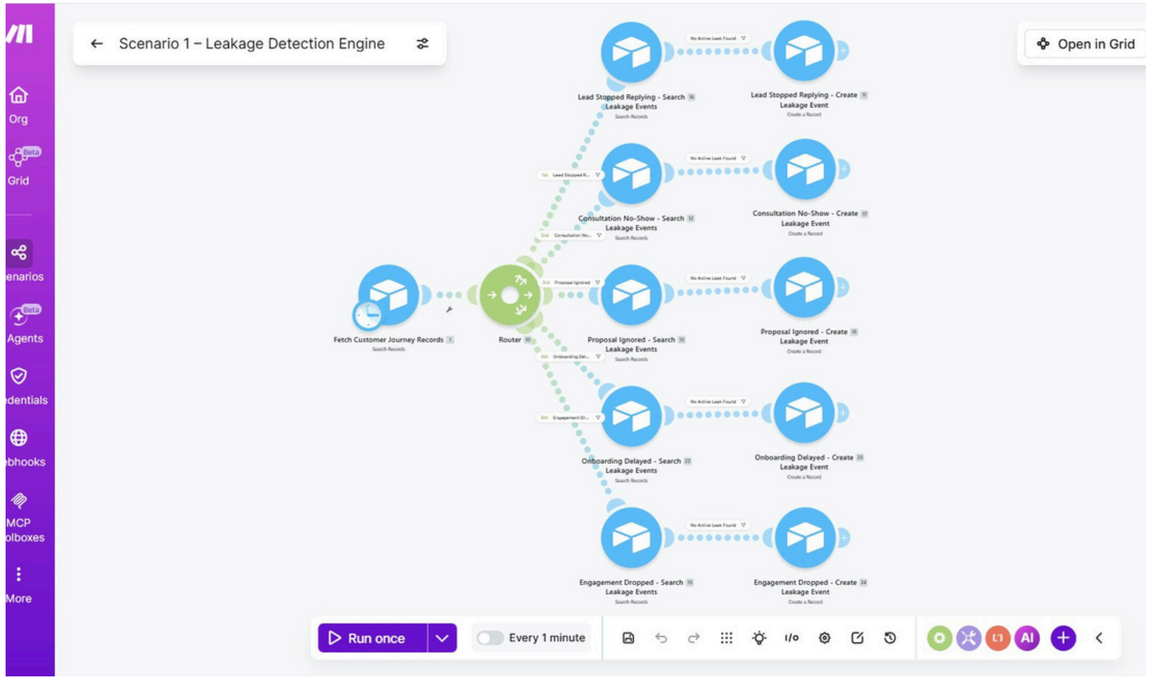
Resolution Tracking Layer

Written by Scenario 5B. Classifies final state and synchronizes upstream on resolution.

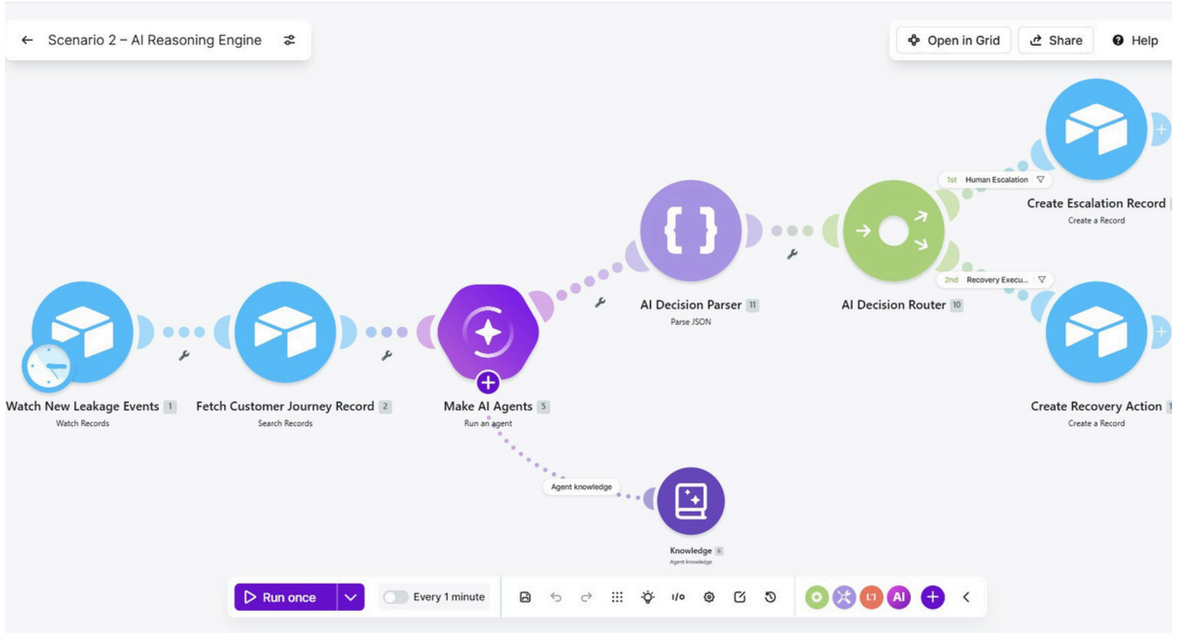
Leakage Detection & AI-Assisted Decision Intelligence

Continuous monitoring engine and context-aware routing logic

SCENARIO 1 – LEAKAGE DETECTION ENGINE



SCENARIO 2 – AI REASONING ENGINE



Detection Conditions

- Lead Not Responding
- Consultation No-Show
- Proposal Ignored
- Onboarding Delayed
- Engagement Dropped

AI Decision Inputs

- Leakage context retrieval
- Lifecycle analysis
- Confidence assessment
- Priority scoring
- Strategy matching

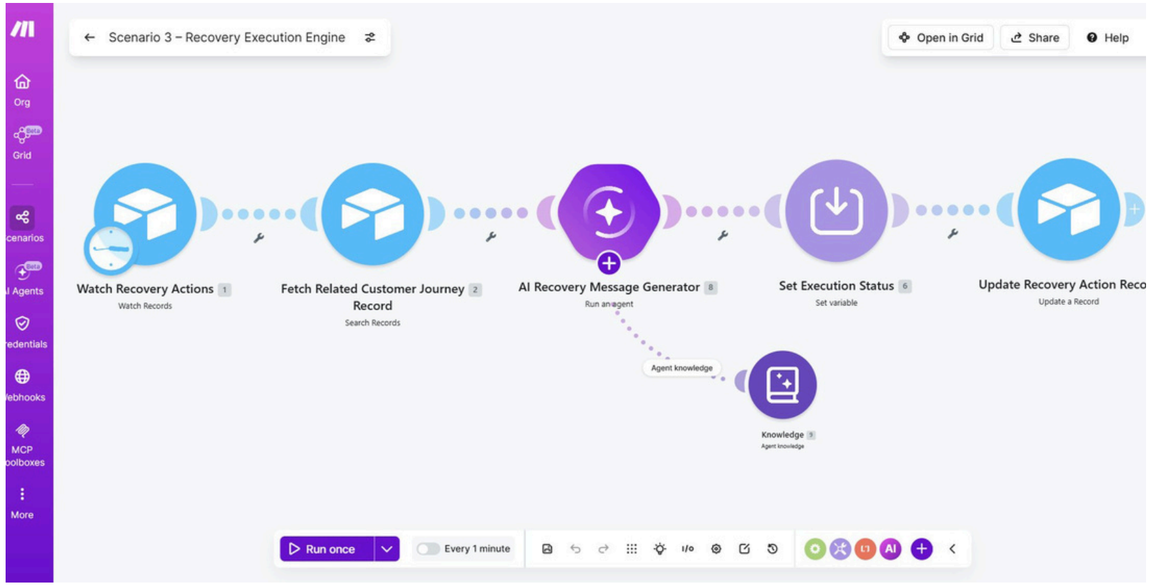
Structured Decision Output

- · Leakage classification
- · Priority level assignment
- · Recovery strategy selected
- · Escalation flag (if required)
- · Confidence score recorded

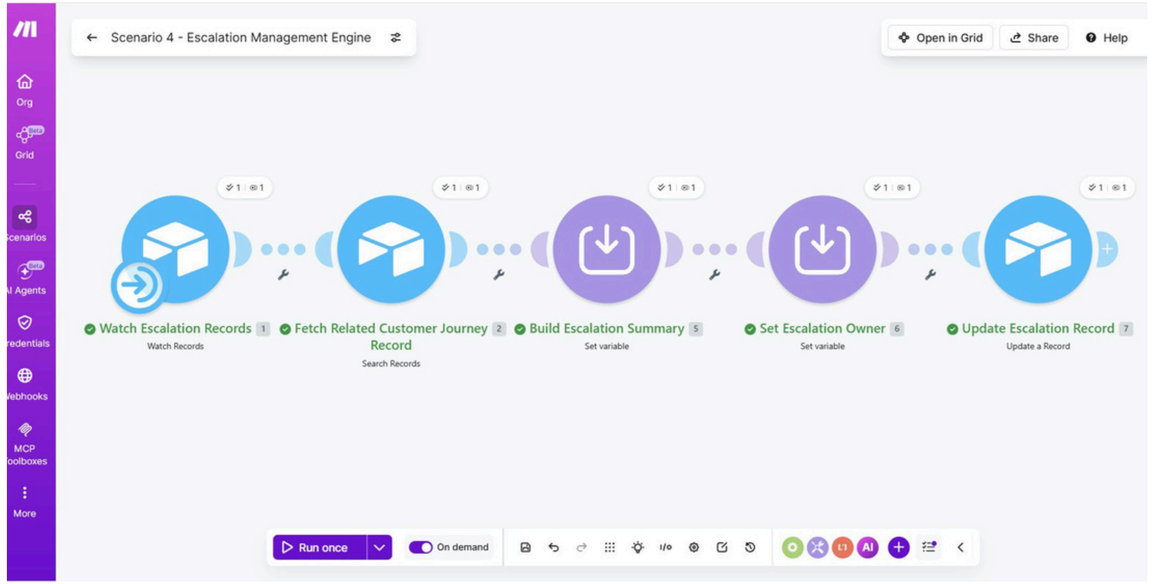
Recovery Execution & Escalation Management

Structured remediation workflows and human-in-the-loop routing

SCENARIO 3 — RECOVERY EXECUTION ENGINE



SCENARIO 4 — ESCALATION MANAGEMENT ENGINE



RECOVERY PATH

1. Watch Recovery Actions — trigger on new record creation
2. Fetch related Customer Journey Record for context
3. AI Recovery Message Generator drafts personalized outreach
4. Set Execution Status and update Recovery Action record

ESCALATION PATH

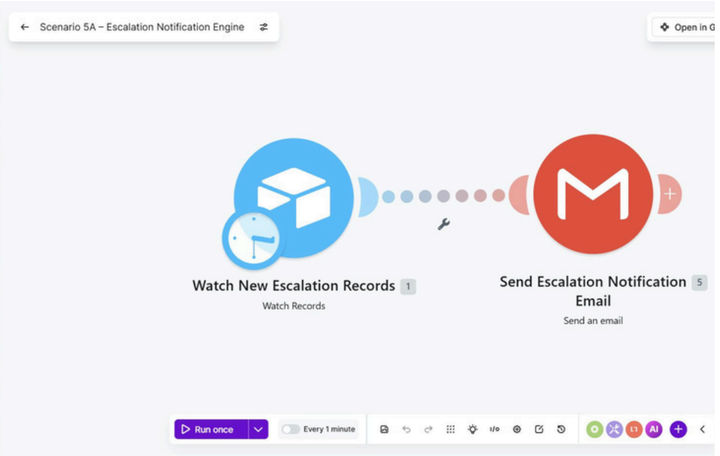
1. Watch Escalation Records — trigger on new record creation
2. Fetch related Customer Journey Record for brief context
3. Build Escalation Summary with priority and ownership fields
4. Set Escalation Owner and update Escalation Record

SCENARIOS 5A & 5B – NOTIFICATION, OUTCOME EVALUATION & CLOSED-LOOP SYNC

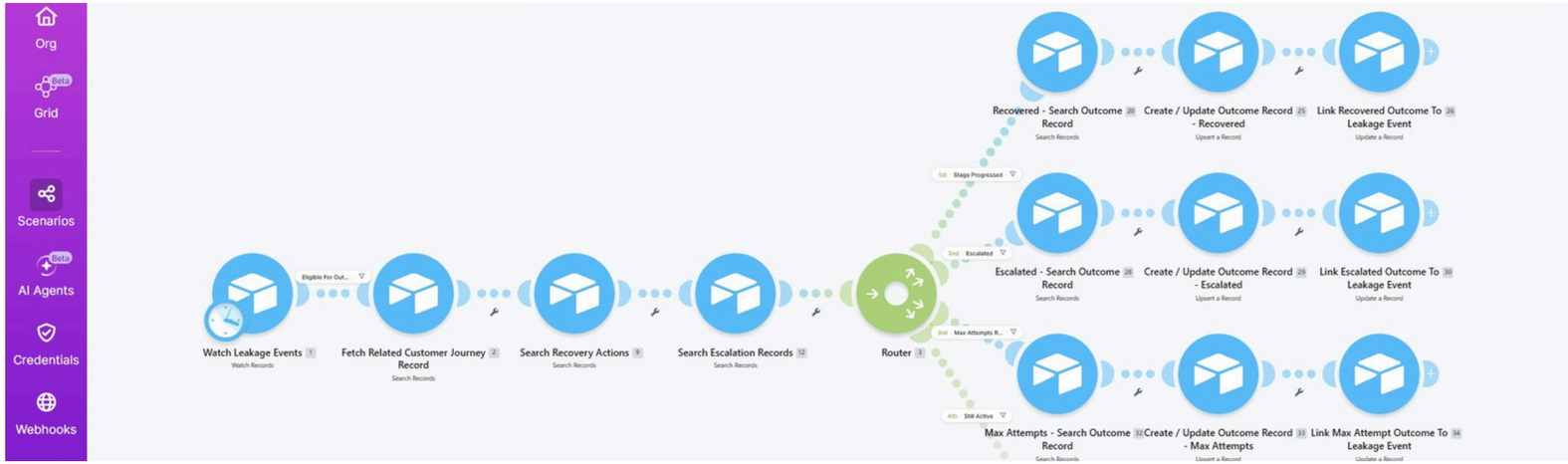
Outcome Evaluation & Closed-Loop Synchronization

Human notification, resolution classification, and full record synchronization

SCENARIO 5A – ESCALATION NOTIFICATION



SCENARIO 5B – OUTCOME EVALUATION ENGINE



Recovered

Stage progressed. The journey continues. Recovery action succeeded. CJR status updated to active.

Escalated

Human intervention confirmed. Escalation record linked. Owner notified. Resolution pending review.

Max Attempts Reached

Maximum recovery attempts exhausted. Outcome classified. Leakage event closed. CJR updated.

CLOSED-LOOP SYNCHRONIZATION

- ↺ Customer Journey Records
- ↺ Leakage Events
- ↺ Recovery Actions

OUTCOME → ALL RECORDS · LIVE SYNC

↺ Escalation Records

PROJECT COMPONENTS

Project Components

Operational building blocks of the platform

01 Custom Intake Form

Intake

HTML, CSS, JavaScript front-end. Captures structured opportunity data. Connected to webhook for downstream routing.

02 Webhook Integration Layer

Integration

Receives form submissions. Validates payload. Routes to Make automation for intake processing and lifecycle initialization.

03 Airtable Operational Database

Data

Five-table relational data model. Customer Journey Records serve as the master lifecycle record and system of record.

04 AI-Assisted Decision Intelligence

Intelligence

Make AI Agents evaluate leakage context, assess confidence, and output structured decisions for recovery or escalation routing.

05 Leakage Detection Engine

Detection

Scenario 1 runs continuously. Monitors 5 lifecycle stages. Creates Leakage Event records when stall conditions are identified.

06 Recovery Execution Engine

Execution

Scenario 3 watches Recovery Actions. AI generates contextual outreach. Tracks attempt count and updates execution status.

07 Escalation Management Engine

Escalation

Scenario 4 builds escalation summaries, assigns owners, and updates Escalation Records for human review routing.

08 Outcome Evaluation Engine

Resolution

Scenario 5B classifies resolution states. Creates Outcome Records. Triggers closed-loop synchronization across all upstream records.

09 Closed-Loop Sync Framework

Feedback

Final outcomes propagate to CJR, Leakage Events, Recovery Actions, and Escalation Records. Ensures complete lifecycle state visibility.

TECHNOLOGY STACK

Technology Stack

Operational architecture tools and infrastructure

Airtable

Operational Database

Data Layer

Five-table relational data model. Customer Journey Records serve as the master lifecycle entity and system of record across all operational layers.

Make

Automation & Orchestration

Automation Layer

Core automation platform. Hosts all seven scenarios. Provides AI Agents integration, webhook triggers, record watching, and conditional routing.

Webhooks

Data Ingestion Boundary

Integration Layer

Entry point for external form submissions. Validates and normalizes intake payloads before routing into the Scenario 0 intake engine.

HTML / CSS / JS

Intake Portal Interface

Intake Layer

Custom-built opportunity intake form. Client-side validation, priority signal capture, and structured submission before webhook handoff.

AI Agents (Make)

Decision Intelligence

Intelligence Layer

Integrated via Make AI Agents. Evaluates leakage context, outputs structured decision JSON, and generates contextual recovery messaging.

Architecture Note

The platform prioritizes operational architecture over tool promotion. Each component serves a defined layer function within the system.
Tool selection was driven by integration capability, not vendor preference.

KEY ARCHITECTURAL DECISIONS

Key Architectural Decisions

Design principles that shaped the operational system

Lifecycle-First Design

Every component was designed around the customer lifecycle, not the tool. All data models, automation triggers, and routing logic trace back to lifecycle stage transitions.

→ Ensures platform scales with journey complexity, not tool limitations.

Centralized System of Record

Customer Journey Records serve as the single source of truth. All downstream records (Leakage Events, Recovery Actions, Escalation Records, Outcome Records) link back via foreign keys.

→ Eliminates data fragmentation and enables complete lifecycle traceability.

Structured Recovery Workflows

Recovery is not ad hoc. Each recovery action records strategy, channel, attempt number, and execution status. AI selects strategy based on leakage context and confidence score.

→ Creates measurable, repeatable recovery processes with audit trails.

Escalation Governance

Escalation is a structured path, not a fallback. Escalation Records capture reason, priority, ownership, and resolution status. Human review is triggered only on AI-flagged high-confidence cases.

→ Prevents escalation from becoming noise. Protects human attention for high-value cases.

Outcome-Based Tracking

The platform doesn't terminate at action execution. Outcomes are classified, recorded, and linked to originating events. Three terminal states are recognized: Recovered, Escalated, or Max Attempts Reached.

→ Enables pattern analysis, recovery effectiveness measurement, and system refinement.

Closed-Loop Synchronization

Resolution outcomes propagate back to CJR, Leakage Events, Recovery Actions, and Escalation Records. No record is left in an unresolved state after terminal outcome classification.

→ Ensures operational visibility is maintained even after journey resolution.

PROJECT OUTCOMES

Project Outcomes

What the platform delivers operationally

Centralized Lifecycle Monitoring

1

All customer journey stages are tracked within a single operational system. Stakeholders have real-time visibility into opportunity health, stage progression, and inactivity indicators.

Automated Leakage Detection

2

Five leakage conditions are monitored continuously. Detection events trigger AI evaluation without manual identification, enabling faster intervention.

Structured Recovery Execution

3

Each at-risk opportunity receives an AI-selected recovery strategy. Outreach is contextual, attempt counts are tracked, and execution status is recorded per recovery action.

Human Escalation Management

4

High-confidence escalation cases are routed to assigned owners with full context. Email notifications are triggered automatically, ensuring no escalation is missed.

Resolution Tracking

5

All leakage events are resolved to a terminal state: Recovered, Escalated, or Maximum Attempts Reached. Resolution data is captured in structured Outcome Records.

Closed-Loop Operational Visibility

6

Outcome synchronization updates Customer Journey Records, Leakage Events, Recovery Actions, and Escalation Records. No record remains unresolved after classification.

KEY LEARNINGS

Key Learnings

Architectural and operational insights from the project

This project evolved from a leakage monitoring concept into a multi-layer operational recovery platform. The most significant architectural insights emerged from designing the data model, escalation governance, and closed-loop feedback mechanisms – not the automation itself.

L1 Lifecycle State Management is the Foundation

Automation without state awareness creates chaos. Every trigger, action, and routing decision must be grounded in current lifecycle state. State fields in the CJR are not metadata – they are operational control variables.

↳ *Design state fields before designing workflows.*

L2 Revenue Operations Requires Relational Architecture

A flat data structure cannot support multi-stage recovery or closed-loop feedback. The five-table relational model (CJR → Leakage Events → Recovery Actions / Escalation Records → Outcome Records) was essential for full lifecycle traceability.

↳ *System design precedes automation design.*

L3 Escalation Governance Protects Operational Quality

Without defined escalation criteria (confidence thresholds, priority flags), escalation becomes noise. AI-scored confidence and structured escalation records ensure human review is reserved for cases that genuinely require it.

↳ *Human-in-the-loop is a design decision, not a fallback.*

L4 Closed-Loop Feedback Completes the System

Platforms that detect and act, but do not resolve and synchronize, create orphaned data states. The closed-loop synchronization layer – linking Outcome Records back to all upstream tables – transforms the platform from a workflow tool into an operational system.

↳ *Resolution without synchronization is incomplete.*

L5 Operational Visibility Requires Intent

Visibility does not emerge naturally from automation. It requires deliberate record structure, field design, and update triggers. Every status field, timestamp, and linked record in this system was chosen specifically to preserve operational visibility.

↳ *Build visibility in; do not bolt it on.*

PROJECT DEVELOPED BY

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CRM Architecture

Lifecycle Automation

Revenue Operations Systems

Workflow Design

Operational Process Automation

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AI Customer Journey Operations & Recovery System · Portfolio Case Study · Revenue Operations Architecture

This presentation documents a conceptual operational system demonstrating
Revenue Operations architecture, lifecycle automation, and systems design.