

AquaMind Operational Scheduling: Bridging Strategy and Execution

Introducing the Production Planner for Tactical Operational Planning

Presenter: AquaMind Development Team

Date: October 2025

The Planning Gap: Strategy Without Execution

AquaMind excels at strategic scenario planning but lacks tactical operational scheduling

STRATEGIC LAYER

Scenario Planning

Enables finance and operations teams to model growth projections, biomass forecasts, and harvest schedules at a high level.

"What will our biomass be in 12 months if we follow this growth model?"

✓ IMPLEMENTED

TACTICAL LAYER

Operational Scheduling

Enables production managers to plan and track day-to-day operational activities such as vaccinations, transfers, and culling events.

"When exactly do we need to vaccinate Batch 2024-001, and in which container?"

✗ MISSING

THE GAP

Production Planner: Timeline-Based Operational Scheduling

A timeline-based tool for planning and tracking future operational activities within scenarios

1 Schedule Future Activities

Plan vaccinations, transfers, sales, culling, and input events for specific batches and containers.

2 Visualize the Schedule

View all planned activities in a Gantt-style timeline, grouped by batch, with color-coded status indicators.

3 Track Completion

Mark activities as completed when executed, providing a historical record of planned vs. actual execution.

4 Scenario-Aware Planning

All planned activities are linked to a scenario, enabling "what-if" analysis for operational schedules.

Timeline View

Oct Nov Dec Jan

Batch 2024-001	Vaccination	Transfer	
Batch 2024-005	Cull	Vaccination	Sale
Batch 2024-010	Transfer	Vaccination	
Batch 2024-015	Vaccination	Sale	
Batch 2024-020	Cull	Transfer	Vaccination

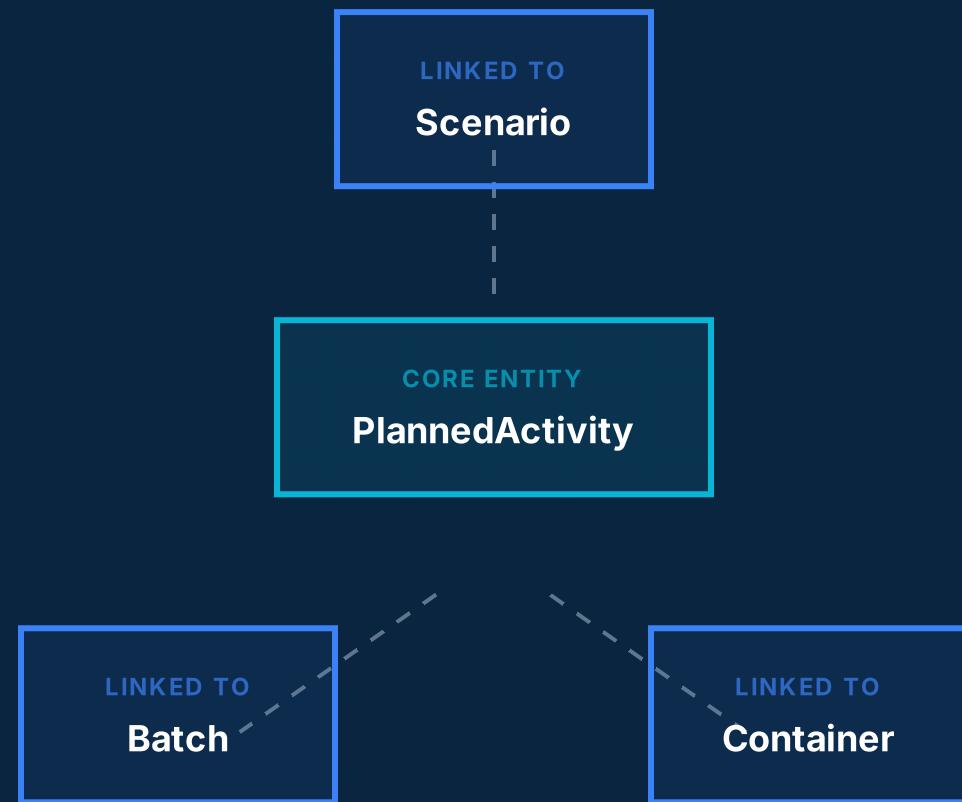
KEY BENEFIT

The Production Planner transforms strategic plans into actionable, day-by-day schedules, ensuring that resources (vaccines, labor, equipment) are available when needed.

Core Concept: The PlannedActivity Entity

Every planned operational event is represented as a PlannedActivity entity

ATTRIBUTE	DESCRIPTION	EXAMPLE
Scenario	The scenario this activity belongs to	Baseline 2025
Batch	The batch this activity is planned for	Batch 2024-001
Activity Type	Type of activity	Vaccination
Due Date	When the activity is scheduled	2025-11-15
Container	Where the activity occurs	Tank A-1
Status	Current state of the activity	Pending



SCENARIO INTEGRATION

Five Activity Types Cover the Full Operational Lifecycle

The Production Planner supports five core activity types, each representing a critical operational event

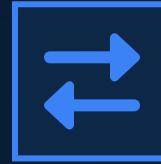
TYPE 1



Vaccination

Planned vaccination events including first vaccination cycles and booster shots. Includes vaccine type and dosage in notes.

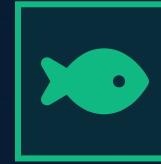
TYPE 2



Transfer

Planned transfers of fish from one container to another, such as moving from hatchery to grow-out cages. Includes source and destination.

TYPE 3



Sale

Planned sale or harvest events, such as selling fish to a harvest plant. Includes planned quantity and expected revenue.

TYPE 4



Cull

Planned culling events to remove low-quality or diseased fish. Includes planned quantity and reason for culling.

TYPE 5



Input

Planned input events such as adding feed, chemicals, or new fish to a container. Includes input type and quantity.

EXTENSIBILITY

Additional activity types (e.g., "Grading", "Sampling", "Water Quality Testing") can be added in future versions based on user feedback and operational requirements.

Frontend Flow: Two-Tier UX Approach

Managing 50-60 active batches requires a scalable overview strategy to prevent information overload

TIER 1

KPI Dashboard for Actionable Overview

12

Upcoming Activities
(Next 7 Days)

3

Overdue
Activities

45

Activities
This Month

8

Completed
This Week



Click any KPI card to drill down to the filtered timeline view

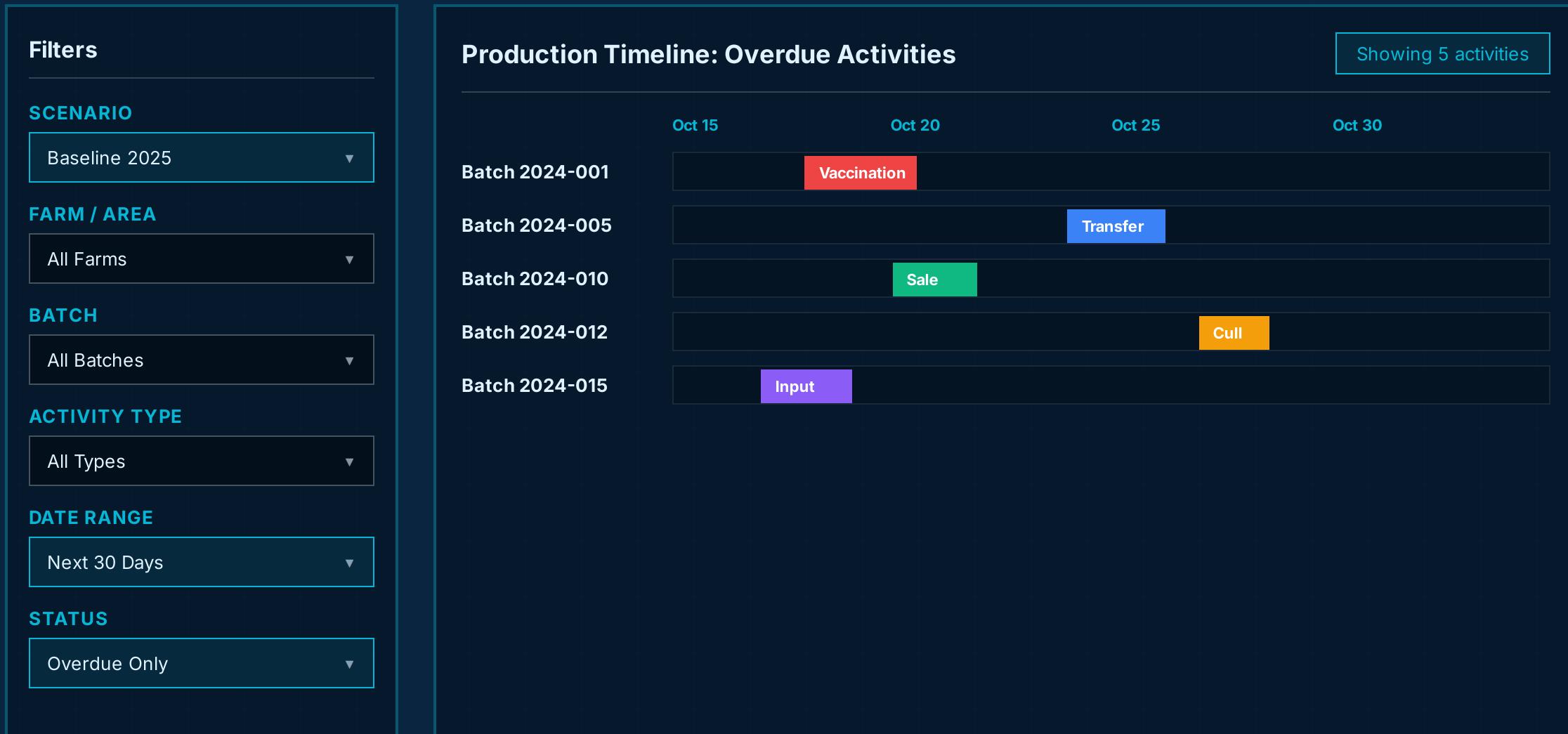
TWO-TIER DESIGN PRINCIPLE

Tier 1 (KPI Dashboard) provides an at-a-glance overview of actionable categories, enabling production managers to quickly identify urgent activities without being overwhelmed by hundreds of individual events. **Tier 2 (Filtered Timeline)** displays the detailed Gantt-style view after a KPI card is clicked, showing only the relevant subset of activities.

Tier 2: Filtered Timeline View with Advanced Controls

After clicking a KPI card, users access a detailed Gantt-style timeline with comprehensive filtering options

TIER 2 DETAILED TIMELINE WITH FILTER PANEL



DESIGN PRINCIPLE

Step 1: KPI Dashboard Provides High-Level Overview

Production managers start with a dashboard featuring four large KPI cards displaying key metrics

12

**Upcoming Activities
(Next 7 Days)**

3

Overdue Activities

45

Activities This Month

8

Completed This Week

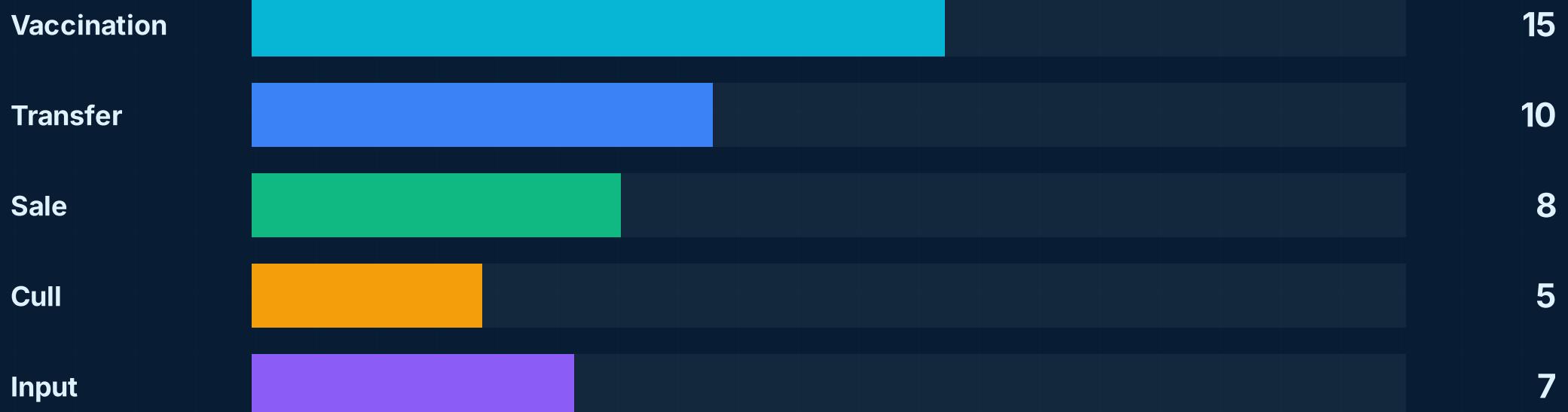
QUICK VISUAL ASSESSMENT

Each card uses distinct color coding (green for upcoming, red for overdue, blue for monthly, gray for completed) to enable production managers to quickly assess operational status at a glance. Clicking any card drills down to a filtered timeline view showing the relevant activities.

Step 1 (Continued): Activity Type Distribution

Below the KPI cards, a horizontal bar chart displays the distribution of planned activities by type

ACTIVITY TYPE DISTRIBUTION



MANAGER INSIGHT

This distribution provides managers with insight into the operational workload composition. Vaccination activities dominate (15), indicating a focus on health management, while transfer activities (10) reflect ongoing batch movements through the production lifecycle. Each activity type is color-coded using the Aquatic Blueprint palette for quick visual recognition.

Step 2: Filtered Timeline Reveals Relevant Activities

Clicking a KPI card transitions to a Gantt-style timeline view showing only the filtered activities

FILTERS

Scenario
Baseline 2025

Batch
All Batches

Activity Type
All Types

Date Range
All Dates

Status
Overdue Only

Timeline View - Overdue Activities

Oct 15 Oct 20 Oct 25 Oct 28 (Today)

Batch 2024-001
Tank A-1 **Vaccination** 8 days overdue

Batch 2024-005
Ring B-3 **Transfer** 6 days overdue

Batch 2024-010
Tank C-2 **Cull** 3 days overdue

User Action: Hover over any activity bar to view details. Click to open the Activity Detail Modal for editing or marking as completed.

3 OVERDUE

Step 3: Activity Detail Modal for Viewing

Clicking an activity bar in the timeline opens a detail modal displaying all activity information

The screenshot shows a modal window titled "Activity Details" with a close button in the top right corner. The modal contains the following information:

Detail Type	Value
SCENARIO	Baseline 2025
BATCH	Batch 2024-001
ACTIVITY TYPE	Vaccination
DUE DATE	October 20, 2025 (8 days overdue)
CONTAINER	Tank A1
NOTES	First vaccination cycle - use Vaccine A
STATUS	OVERDUE

On the left side of the modal, there is a vertical list of activity bars with labels: "Batch 2024-001", "Batch 2024-005", and "Batch 2024-010".

Step 3 (Continued): Activity Actions and Completion Workflow

The activity detail modal provides three action buttons for managing planned activities

AVAILABLE ACTIONS

MARK AS COMPLETED

EDIT

DELETE

Completion Workflow: From Planned to Completed

- 1 Manager clicks "Mark as Completed" →
- 2 Confirmation dialog appears →
- 3 System updates status to "Completed" →
- 4 Optional linking to actual operational record

Confirm Activity Completion

COMPLETION DATE

2025-10-28 (Today)

CANCEL

CONFIRM COMPLETION

SYSTEM RESPONSE

Upon confirmation, the system **updates the activity status to "Completed"**, records the completion date, and **optionally links the planned activity to the actual operational record** if available in the system. This workflow ensures that planned activities are tracked through to completion and provides audit trails for operational compliance.

Step 4: Creating New Activities via Form-Based Modal

Users create new planned activities by clicking the '+ New Activity' button, which opens a comprehensive form dialog

New Planned Activity

*** Scenario**
Baseline 2025
Pre-filled with currently selected scenario (read-only)

*** Batch**
Select batch...

*** Due Date**
YYYY-MM-DD

*** Activity Type**
Select type...

*** Container**
Select container...

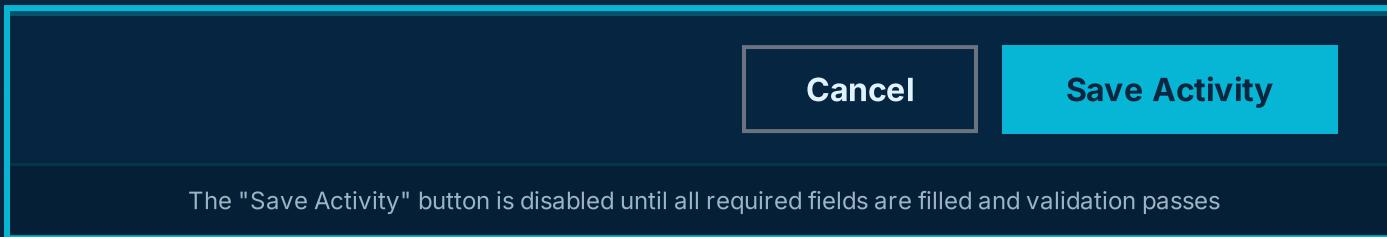
Destination Container (Required for Transfer activities)
Select destination...
Only enabled when Activity Type is "Transfer"

Quantity (Optional)
0

Notes (Optional)
Enter additional details...

Step 4 (Continued): Form Validation and Save Actions

The system validates all inputs before allowing the user to save the new planned activity



VALIDATION RULES

1 Required Fields Check

REQUIRED

All fields marked with a red asterisk (*) must be filled: Scenario, Batch, Activity Type, Due Date, and Container. The Save button remains disabled until all required fields contain valid data.

2 Due Date Validation

WARNING ONLY

The system checks if the due date is in the future. If the date is in the past, a warning message is displayed, but the user can still proceed with saving the activity.

3 Batch-Scenario Consistency

REQUIRED

The system validates that the selected batch exists within the currently selected scenario. This prevents creating planned activities for batches that are not part of the scenario.

4 Transfer Activity Validation

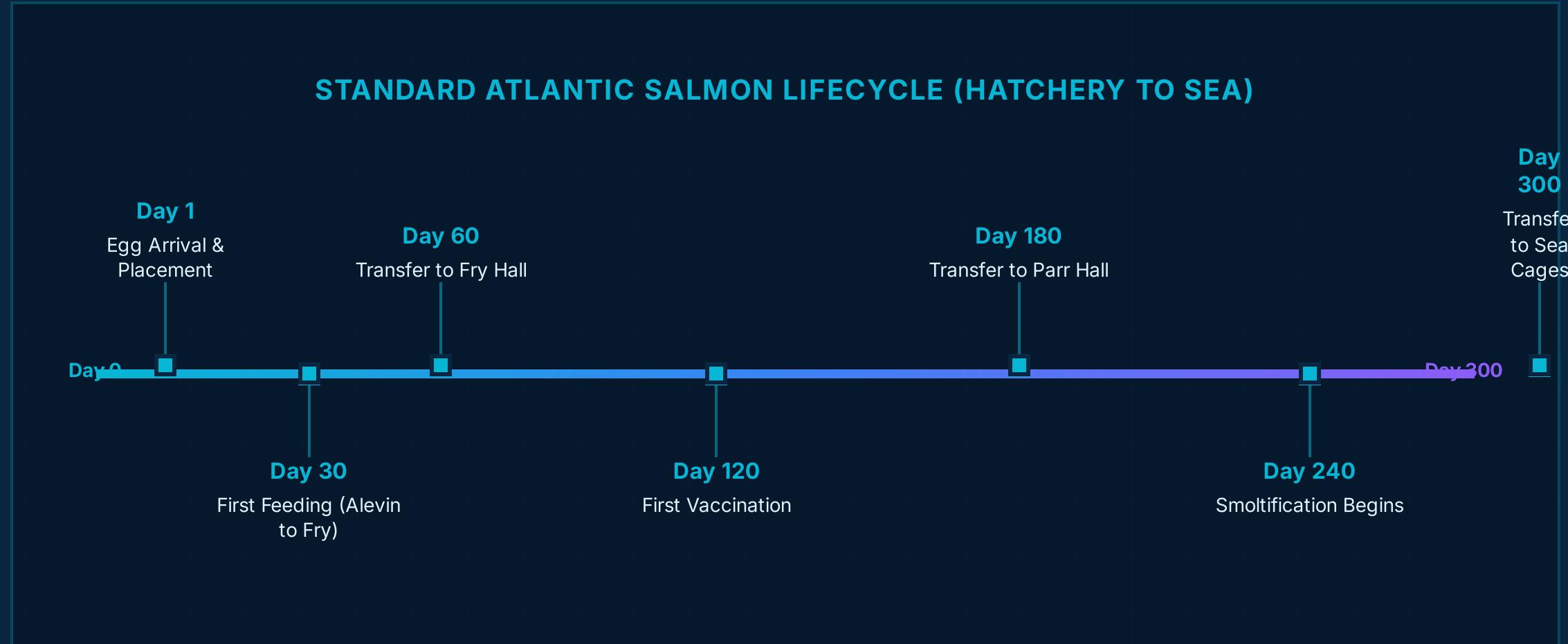
CONDITIONAL

When the Activity Type is "Transfer", the Destination Container field becomes required. The system validates that a destination container is selected before allowing the save operation.

SAVE WORKFLOW

Pre-Batch Planning Challenge: The Repetitive Data Entry Problem

Salmon farming has highly standardized operational lifecycles with predictable milestones



This standardized lifecycle is repeated for every batch. The continuation slide will explain why this predictability creates a challenge for manual planning in current systems.

Pre-Batch Planning Challenge: The Manual Effort and FishTalk Limitation

Repetitive data entry consumes valuable time and introduces errors into the planning process

THE MANUAL EFFORT PROBLEM

1 Time-Consuming Data Entry

Creating **20-30 planned activities manually** for each new batch requires significant time investment. Production managers spend **hours every month** on repetitive data entry instead of strategic planning and operational optimization.

2 Error-Prone Manual Process

Manual data entry introduces opportunities for **human error**: incorrect due dates, missing activities, wrong containers, and inconsistent activity definitions across batches. These errors can lead to missed vaccinations, delayed transfers, and compliance issues.

3 Scale Amplifies the Problem

With **multiple batches starting every month**, the manual effort compounds rapidly. A farm starting 5 new batches per month must create **100-150 planned activities monthly**, consuming valuable management time that could be better spent on analysis and decision-making.



FISHTALK LIMITATION: NO TEMPLATES, NO PRE-BATCH PLANNING

Pre-Batch Solution: Batch Lifecycle Templates Automate Planning

Define standard activity schedules once, then automatically generate planned activities for every new batch



KEY BENEFITS

Unplanned Activities Challenge: Handling Ad-Hoc Events

Not all operational events can be planned in advance—how should the system handle the gap between plans and reality?

PLANNED ACTIVITIES

Planned Vaccination

Scheduled: January 15, 2025

Planned Transfer

Scheduled: February 20, 2025

Planned Feeding Input

Scheduled: March 10, 2025

ACTUAL OPERATIONAL RECORDS

Emergency Mortality Event

Occurred: January 10, 2025

Unplanned Transfer

Occurred: February 18, 2025



Ad-hoc Vaccination

Occurred: March 5, 2025

Unplanned Treatment

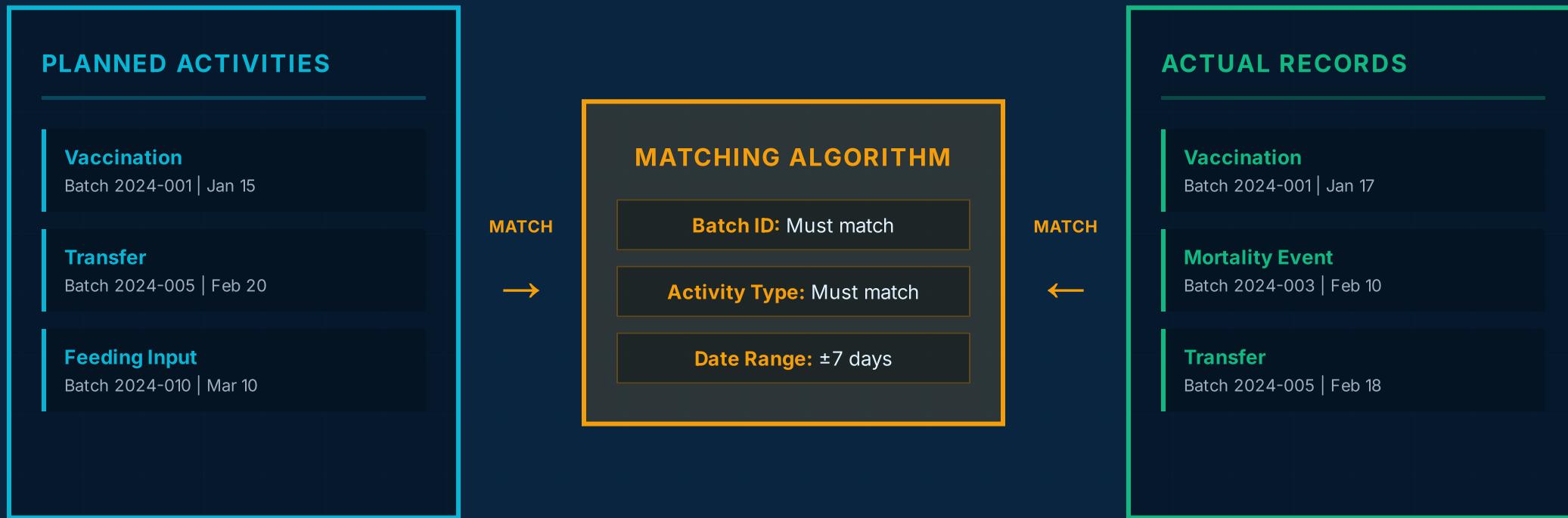
Occurred: March 22, 2025

THE CHALLENGE

Emergency mortality events, unplanned transfers, and ad-hoc vaccinations cannot be predicted weeks in advance. Farm staff must register these events in the operational system immediately when they occur. The Production Planner must handle these **unplanned activities without disrupting the existing plan**, while still providing visibility into what was planned versus what actually happened. How should the system link planned activities to actual operational records when they don't align perfectly?

Unplanned Solution: Automatic Linking Between Plans and Actuals

AquaMind separates planned activities from actual operational records, with optional automatic linking



KEY BENEFITS OF AUTOMATIC LINKING

Unplanned Example: Registering Emergency Mortality Events (Part 1)

Farm staff can register unplanned events directly in the operational app, triggering automatic matching logic

1 Farm staff opens the operational app and selects "Register Mortality Event"

2 Staff enters event details: Batch, Date, Quantity, Cause (e.g., "Disease outbreak")

3 Staff submits the mortality event record to the system

SYSTEM DECISION POINT

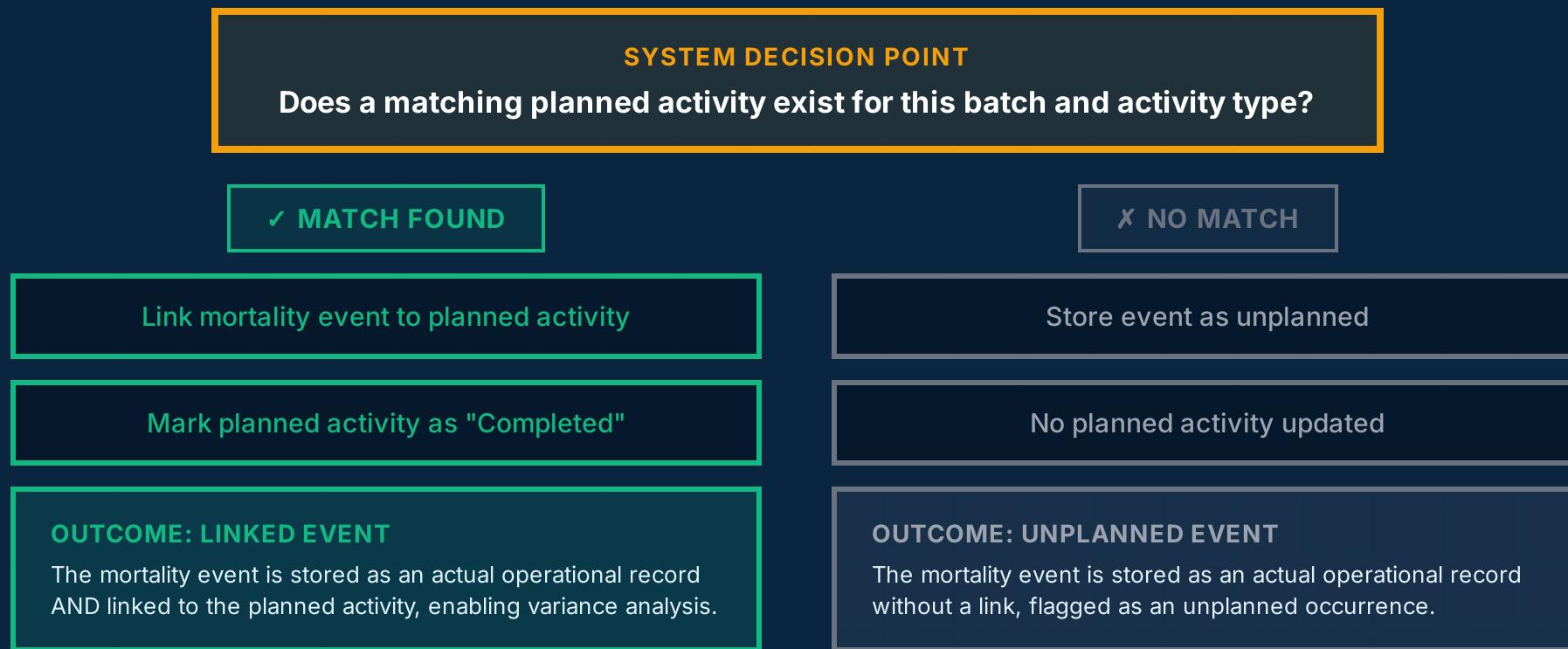
Does a matching planned activity exist for this batch and activity type?

WHAT HAPPENS NEXT

The system evaluates the submitted mortality event against existing planned activities using the matching algorithm (Batch ID, Activity Type, Date Range ±7 days). The next slide shows the **two possible outcomes**: Match Found (linking to planned activity) and No Match (storing as unplanned event), along with the key value proposition of this automatic linking approach for operational reporting and compliance tracking.

Unplanned Example: Decision Outcomes and System Value

The system automatically handles matching and linking, providing visibility into both planned and unplanned activities

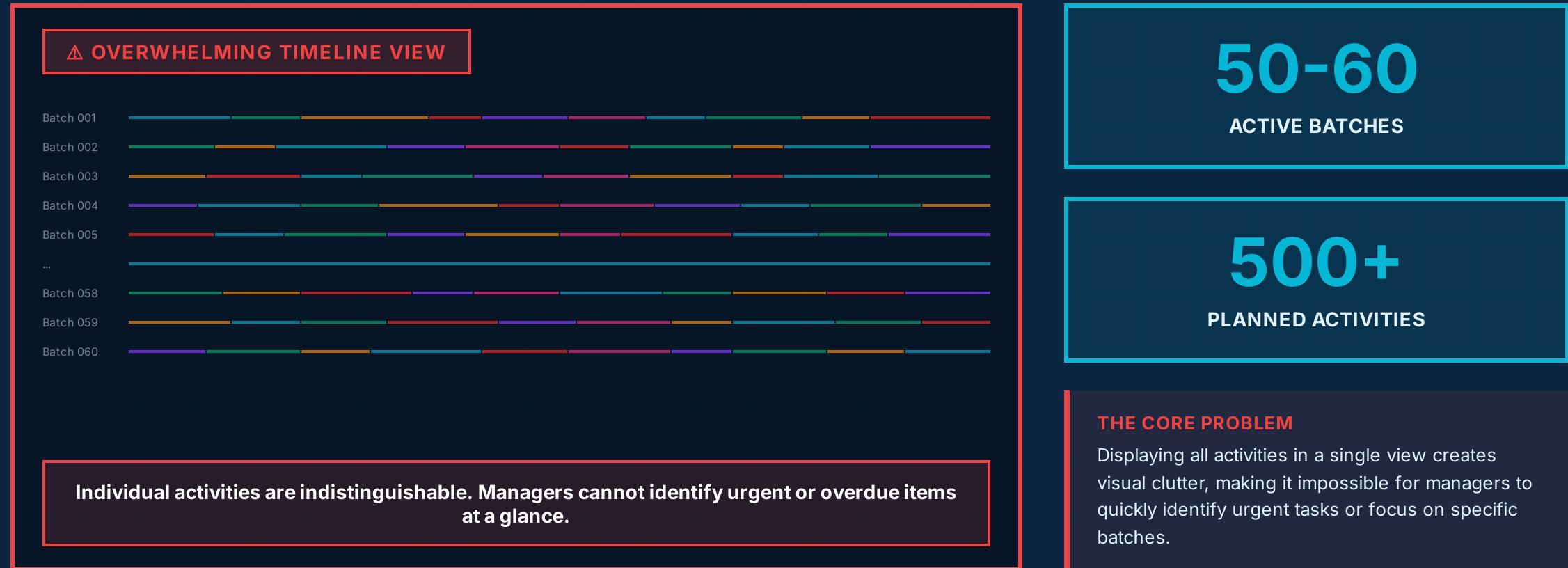


KEY VALUE

This automatic linking approach ensures that **farm staff can register events immediately** without worrying about the planning system. The system handles the complexity of matching and linking in the background, providing **visibility into both planned and unplanned activities** for accurate operational reporting and compliance tracking.

Overview Scalability Challenge: Managing 50-60 Active Batches

With 500-1,200 planned activities across dozens of batches, displaying all activities in a single timeline creates visual overload



1

Finding Urgent Activities

Managers cannot quickly identify which activities are due today or overdue when viewing 500+

2

Batch-Specific Focus

When planning for a specific batch or farm, managers must manually scan through all 60

3

Performance Degradation

Rendering 500-1,200 timeline items causes slow page loads and poor responsiveness, especially

Scalability Solution 1: KPI Cards for Actionable Overview

KPI cards aggregate planned activities into actionable categories, enabling managers to quickly identify urgent tasks and focus on what matters most

UPCOMING (NEXT 7 DAYS)

12

Activities scheduled within the next week that require preparation and resource allocation

Proactive Planning Window

OVERDUE

3

Activities past their due date that require immediate attention and corrective action

Urgent Action Required

THIS MONTH

45

Total activities planned for the current month across all batches and scenarios

Monthly Planning Horizon

COMPLETED

127

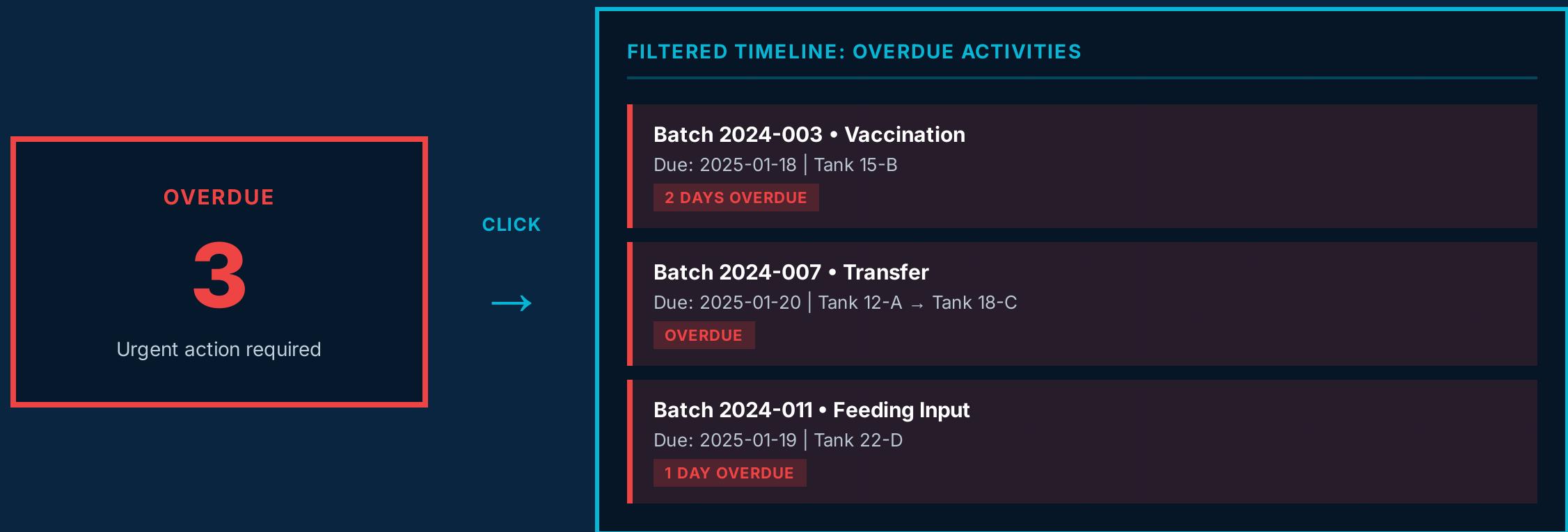
Activities successfully executed and marked as completed, providing progress visibility

Historical Performance

KPI Cards: Interactive Drill-Down for Focused Planning

Clicking any KPI card filters the timeline to show only relevant activities, enabling context-aware decision-making

The four KPI cards (Upcoming, Overdue, This Month, Completed) provide an actionable overview of all planned activities across 50-60 active batches.



KEY VALUE: REDUCED INFORMATION OVERLOAD

This drill-down approach allows managers to **focus on what matters most** without being overwhelmed by the full list of 200+ planned activities across all batches. By clicking the "Overdue" card, they can **quickly assess the 3 urgent tasks**, identify the responsible staff, and

Scalability Solution 2: Advanced Filtering and Grouping (Part 1)

Managers can focus on specific subsets of activities using comprehensive filters and flexible grouping options

FILTERS

Scenario
Baseline 2025

Farm / Area
All Farms

Batch
All Batches

Activity Type
 Vaccination
 Transfer
 Sale / Cull / Input

Date Range
2025-01-01 — 2025-03-31

Status
 Pending
 Overdue / Completed

GROUP BY
 Batch
 Farm / Activity Type
 None

Apply Filters **Clear All**

FILTERED TIMELINE VIEW

Showing 4 activities: Vaccination + Transfer, Pending, Q1 2025

Batch 2024-001
Vaccination - Jan 15, 2025
Transfer to Parr Hall - Feb 10, 2025

Batch 2024-005
Vaccination - Jan 22, 2025
Transfer to Sea - Mar 5, 2025

WHAT MAKES THIS POWERFUL

Scalability Solution 2: Key Benefits of Filtering and Grouping

The advanced filter system delivers three critical advantages for managing 50-60 active batches and hundreds of planned activities

1

Focused Attention

Managers can filter to show only overdue activities or upcoming vaccinations, eliminating information overload. This targeted view enables quick decision-making and prioritization of urgent tasks without scrolling through irrelevant data.

2

Flexible Grouping

Group activities by Batch, Farm, or Activity Type to match different planning workflows and reporting needs. Farm managers can view all activities for a specific farm, while production managers can group by activity type to coordinate resources across multiple sites.

3

Scalable to 1000+ Activities

The filter system scales effortlessly from 50 to 1000+ planned activities without performance degradation. As the operation grows, the same interface and filtering logic remain fast and responsive, ensuring long-term usability.

WHY THIS MATTERS

The combination of **comprehensive filters** (Scenario, Farm, Batch, Activity Type, Date Range, Status) and **flexible grouping options** (Batch, Farm, Activity Type, None) ensures that managers can always find the exact view they need, whether planning a

Scalability Solution 3: Batch-Centric Detail Views

Integrate planned activities into the existing Batch Detail Page, reducing clutter in the main timeline and enabling context-aware planning

Batch Detail: 2024-001 (Atlantic Salmon)					
Overview	Events	Planned Activities	Health	Transfers	Financials
Activity Type	Due Date	Container	Status	Actions	
Vaccination	2025-02-15	Tank 12-A	PENDING	<button>View</button>	
Transfer	2025-03-01	Tank 12-A → Tank 15-B	PENDING	<button>View</button>	
Feeding Input	2025-02-10	Tank 12-A	COMPLETED	<button>View</button>	

MORE ACTIVITIES AND BENEFITS AHEAD

Scalability Solution 3 (Continued): Complete Activity List and Benefits

The remaining planned activities and the key advantages of integrating planning into batch detail views

Continuing from the Batch Detail Page for Batch 2024-001, the "Planned Activities" tab shows all scheduled operational tasks for this specific batch.

Activity Type	Due Date	Container	Status	Actions
Vaccination	2025-01-20	Tank 12-A	OVERDUE	<button>View</button>
Sale	2025-04-15	Tank 12-A	PENDING	<button>View</button>
Culling	2025-03-10	Tank 12-A	PENDING	<button>View</button>

KEY BENEFITS OF BATCH-CENTRIC PLANNING

This batch-centric view **reduces cognitive load** by showing only activities relevant to the selected batch. Farm staff can quickly see all planned activities for a batch they are currently working with, without navigating to a separate planning page. The table format provides **quick scanning** and **status visibility**, enabling staff to identify overdue activities (like the January 20th vaccination) and upcoming tasks at a glance. This approach complements the main Production Planner timeline by providing a **focused, context-aware view** for day-to-day operational work, particularly valuable when managing 50-60 active batches simultaneously.

AquaMind Advances Beyond FishTalk in Five Key Areas

The Production Planner builds on FishTalk's foundation while adding modern scenario integration, templates, and scalable overview capabilities

FEATURE	FISHTALK	AQUAMIND
Scenario Integration Planned activities are linked to scenarios for what-if analysis and strategic planning	 Activities exist independently of scenarios	 Full scenario context for all planned activities
Pre-Batch Planning (Templates) Batch Lifecycle Templates auto-generate standard activities for new batches	 Manual activity creation for each batch	 Template-based automation (Phase 2)

CONTINUED ON NEXT SLIDE

The next slide continues with **three additional key areas** where AquaMind advances beyond FishTalk: **Unplanned Activities Handling** (intelligent matching algorithm), **Overview Scalability** (KPI dashboard for 50-60 batches), and **Mobile Support** (web-based responsive design). The final slide will present the key takeaway from this comparison.

AquaMind Advances Beyond FishTalk: Scalability, Automation, and Mobile Access

Previous slide covered: Scenario Integration and Pre-Batch Planning Templates

FEATURE	FISHTALK	AQUAMIND
Unplanned Activities Handling Automatic matching and linking of unplanned events to planned activities	X Separate tracking for planned vs. actual	✓ Intelligent matching algorithm (Phase 2)
Overview Scalability (50-60 Batches) KPI cards and advanced filters for managing hundreds of activities	X List view becomes overwhelming at scale	✓ KPI dashboard + filtered timeline
Mobile Support Responsive design for farm staff to access plans on tablets and phones	X Desktop-only fat client	✓ Web-based, responsive design

KEY TAKEAWAY

AquaMind's Production Planner **builds on FishTalk's proven planning foundation** while addressing the key limitations identified by users: lack of scenario integration, manual repetition for new batches, poor scalability for large operations, and no mobile access. The result is a **modern, web-based planning system** that scales effortlessly from 10 to 100+ batches while maintaining the familiar planning workflows that FishTalk users rely on.

Two-Phase Implementation: Core First, Advanced Later

Deliver immediate value with Phase 1 core functionality, then enhance with Phase 2 advanced capabilities

PHASE 1: CORE FUNCTIONALITY

Essential Planning Tools

Duration: 3-4 months

1 KPI Dashboard

Upcoming, Overdue, This Month, Completed cards with drill-down

2 Timeline View

Gantt/Timeline chart with advanced filtering and grouping

3 Activity CRUD

Create, Read, Update, Delete planned activities with validation

4 Batch-Centric Views

Planned Activities tab in Batch Detail Page for focused planning

PHASE 2: ADVANCED FEATURES

Automation & Intelligence

Duration: 2-3 months

1 Batch Lifecycle Templates

Auto-generate standard activities for new batches based on templates

2 Automatic Linking

Match unplanned events to planned activities using intelligent algorithm

3 Variance Reporting

Planned vs. Actual analysis for performance tracking and optimization

4 Mobile Optimization

Responsive design for tablets and phones with offline support

Months 1-4: Core Development

Months 5-7: Advanced Features

CONTINUED ON NEXT SLIDE

Deployment Timeline and Rationale for Phased Approach

Previous slide covered: Phase 1 (Core Functionality) and Phase 2 (Advanced Features) with their key deliverables

► PHASE 1 DEPLOYMENT: MONTH 5 | FULL DEPLOYMENT: MONTH 8

WHY THIS PHASED APPROACH

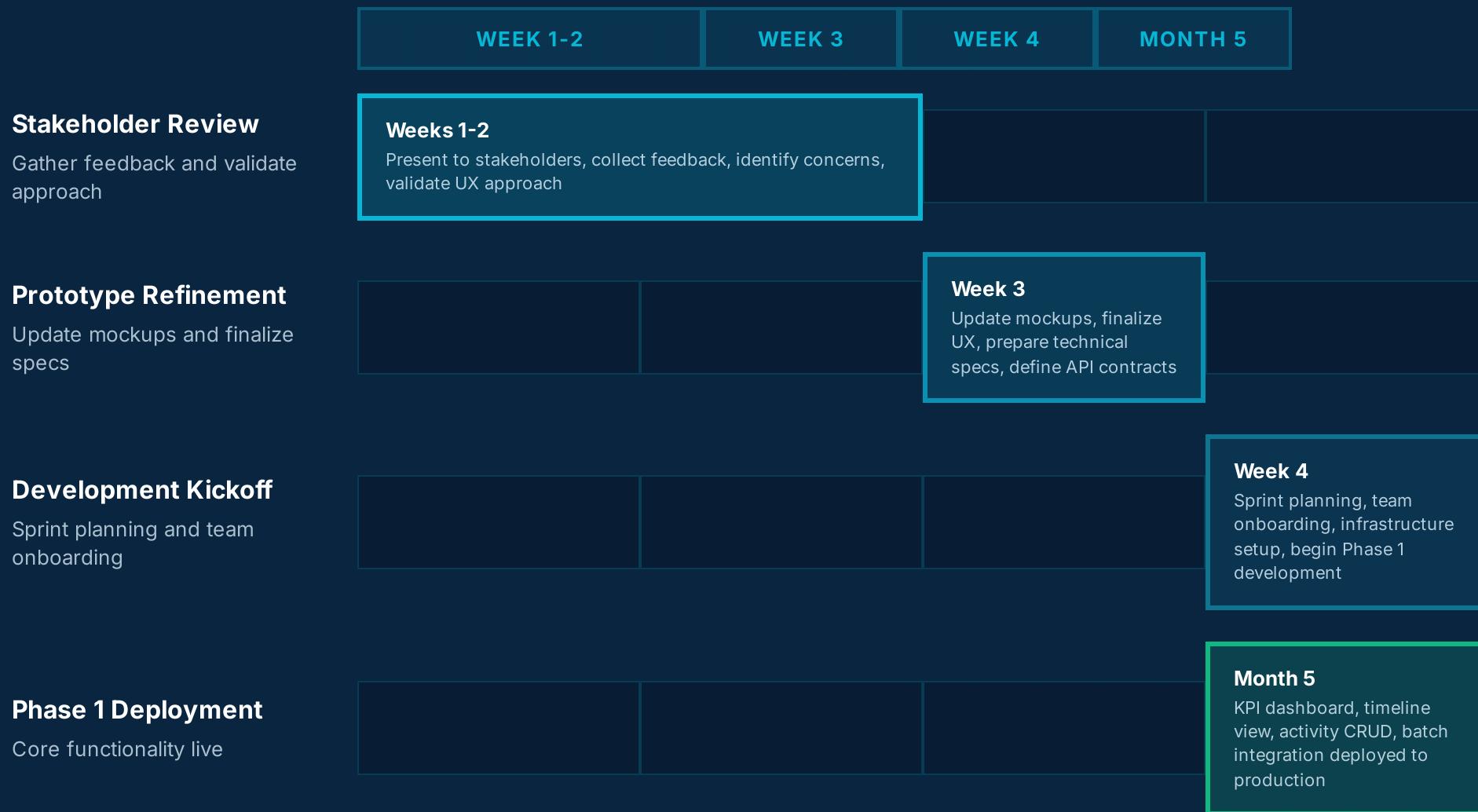
Phase 1 delivers **immediate, tangible value** to production managers and farm staff within 4 months, enabling them to start using the Production Planner for day-to-day operational planning. Phase 2 builds on this foundation by adding **automation and intelligence** that reduce manual work and improve accuracy. This approach minimizes risk, allows for user feedback between phases, and ensures that the core functionality is rock-solid before adding advanced features.

Measurable Value for Managers, Staff, and Finance Teams

The Production Planner delivers targeted benefits to three key user groups, improving operational efficiency and financial visibility

Next Steps: Stakeholder Feedback and Development Kickoff

A clear 5-month roadmap from stakeholder review to Phase 1 deployment of the Production Planner



YOUR FEEDBACK DRIVES SUCCESS

The next **two weeks are critical** for gathering your input on the proposed Production Planner design. Your feedback will directly shape the prototype refinement in Week 3 and ensure that the final implementation meets the real-world needs of farm managers, production staff, and finance teams. **Let's build this together.**

Open Discussion: Refining the Production Planner Together

Your feedback and operational insights are critical to ensuring the Production Planner meets your needs

1

Are Batch Lifecycle Templates valuable for your operation?

Would auto-generating standard activities (vaccinations, transfers) for new batches save significant time, or do your batches vary too much?

2

Is automatic linking of unplanned activities sufficient?

Should farm staff have the ability to manually override the automatic matching algorithm, or is the ±7 day window adequate?

3

Are KPI cards and filters adequate for managing 50-60 active batches?

Do you need additional overview features (e.g., heat maps, capacity utilization charts) to manage the scale of your operation?

4

How important is mobile access for farm staff in the field?

Should mobile users be able to create and edit planned activities, or is read-only access (viewing upcoming tasks) sufficient?

5

Should we integrate the Production Planner with external systems?

Examples: ERP systems (for cost data), weather forecasting APIs (to adjust transfer schedules), or market price feeds (to optimize sale timing). What integrations would deliver the most value?

YOUR INPUT SHAPES THE ROADMAP

These questions represent **key design decisions** that will determine the Production Planner's success in your operation. Please share your feedback, concerns, and any additional requirements we haven't addressed. The goal is to build a planning system that **scales with your business** while remaining intuitive for daily use by farm staff and managers.