PROCESS BATCHING — LAYER 2

Intelligent Batch & Recipe Management

Overview

The MIP Process Batching Module orchestrates intelligent batch execution within a single unit of operation. Built on the IIoT Core, it manages recipe sequencing, step-level logic, and embedded MetaLoop™ machine learning for real-time optimization. With complete batch record generation and per-unit licensing, it supports traceability, compliance, and scalable deployment tailored to operational complexity.

Key Features

- Recipe-based orchestration with step-level conditional logic
- Real-time operator prompts for barcode scans or material inputs
- Integrated MetaLoop™ feedback for intelligent tuning
- Generates compliant batch records with embedded traceability
- Adaptive control handoffs based on material, sensor, or user input

How it Works

Process Batching orchestrates discrete batch runs by executing step-sequenced instructions embedded with logic gates and material dependencies. Operators scan lot codes or confirm steps through Visionary™, while MetaLoop™ algorithms adjust timing and targets in real-time based on performance feedback. It reveals optimization opportunities by capturing granular step performance and connecting outcomes with upstream material and configuration variation.

Use Cases

- Manage recipe execution and sequencing within a defined unit operation
- Visualize batch state, forecast remaining steps, and track timelines
- Generate compliant, audit-ready batch records with traceability
- Support local adaptation of recipes for variant SKUs or materials
- Enable repeatable, version-controlled batch orchestration at the edge

Advantages

- Links operator actions to batch records with full traceability
- Captures lot codes, BOM parts, and material inputs via scanner and manual entry
- Ensures version-controlled, repeatable execution per recipe
- Generates compliant batch documentation in real time
- Adapts batch steps based on in-process feedback and yield optimization

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