

# PlanningAI: Production Planning for Manufacturing and Process Industry



## The Planning Challenge

- **Efficiency:** Requirements for optimizing Overall Equipment Effectiveness (OEE)
- **Flexibility:** Custom manufacturing, increasing production volumes, optimizing utilization
- **Legal certainty:** Quality assurance and traceability through digital process recording (documentation requirements, Batch Cards)
- **Bottlenecks:** Individual, variable production requirements and peaks (maintenance, reacting to supply chain changes)
- **Knowledge monopoly:** Pplanning and documentation are often still paper-based and without integration into technical systems



## The Planning Solution

- Fine-grained scheduling using automated planning / PlanningAI
- Visualization and manual adjustment capability, continuous plan validation
- Digitization of data for transparency and reporting
- Flexible manufacturing processes are now possible and scalable
- Complex, multi-step process workflows are reliably mapped and completed on time (reducing inventory levels and meeting critical process deadlines)
- New planning process is faster and simpler, with user acceptance and positive feedback

## Project Example

**Company:** Allnex, market leader in industrial coating resins, 34 production sites worldwide

**Topic:** Process adjustments in the production of chemical substances, optimal utilization of reactors, setup and cleaning times, variable delivery times

**Result:** automated and adaptable fine-grained scheduling with a "Plan Board" based on Timefold, integration into existing SAP processes

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## PlanningAI - Application Options

### Automotive and Supplier Industry

- Cycle-accurate manufacturing of components
- Fine-grained scheduling responds to short-notice OEM call-off changes

### Machinery and Plant Engineering

- One-off and small batch production with high variant diversity
- Cross-resource dependencies, material availability, assembly sequences
- Meeting deadlines despite complex project structures

### Pharmaceutical Industry

- Fine-grained scheduling of production lines for pharmaceuticals
- Batch tracking (Batch Tracking), cleaning validation
- Minimizing setup times while maintaining release processes

### Food and Beverage Industry

- Shelf life, sequence planning, expiration dates, cold chains
- Fine-grained scheduling to minimize waste and spoilage
- E.g. dairy products, beverages, chocolate, or baked goods

### Edge Computing / Machine Scheduling cross-industry

- Machine autonomously runs optimization cycles
- AI-supported process optimization
- Scrap detection, (time-critical) process control, maintenance prediction

### Strategic Location Planning / cross-industry

- Precise spatial and temporal planning for production, logistics, warehousing, service units
- Location configurations based on cost, service level, sustainability, and risk

Contact us — for your optimal production planning.