

# Predictive maintenance scheduling

This workflow automatically monitors CNC machine performance data to predict maintenance needs and schedule preventive maintenance before equipment failures occur. It reduces unplanned downtime and optimizes production scheduling by proactively maintaining critical manufacturing equipment.

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## WORKFLOW TRIGGER

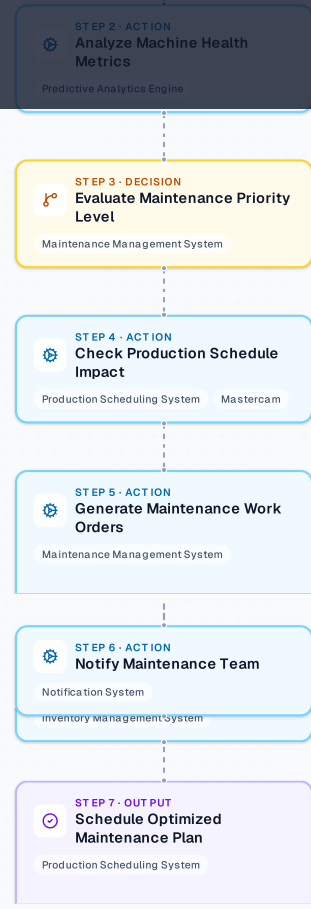


CNC machine sensors detect anomalous vibration, temperature, or performance patterns during operation.

## Visual Flow

Each node represents an automated step. Connections show how data and decisions move through the workflow.





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## Step-by-Step Breakdown

Detailed explanation of each automated stage in the workflow.

1

⚡ TRIGGER

### Monitor CNC Performance Data

FANUC CNC Controls continuously collect real-time performance metrics including spindle vibration, tool wear indicators, and operating

temperatures. Data is automatically transmitted to the maintenance system when anomalies are detected.

FANUC CNC Controls

2

 ACTION

## Analyze Machine Health Metrics

AI algorithms process historical and real-time data to calculate machine health scores and predict potential failure points. The system identifies patterns that indicate upcoming maintenance requirements.

Predictive Analytics Engine

3

 DECISION

## Evaluate Maintenance Priority Level

System determines if detected issues require immediate attention, scheduled maintenance within 48 hours, or routine maintenance during next planned downtime. Critical issues trigger immediate workflow escalation.

Maintenance Management System

4

 ACTION

## Check Production Schedule Impact

System cross-references current and upcoming production jobs with proposed maintenance windows. It identifies optimal maintenance timing to minimize production disruption.

Production Scheduling System

Mastercam

5

 ACTION

## AI Business OS

### Generate Maintenance Work Orders

Automated creation of detailed work orders including required parts, estimated labor hours, and specific maintenance procedures. System also reserves necessary replacement parts from inventory.

Maintenance Management System

Inventory Management System

6

 ACTION

#### Notify Maintenance Team

Maintenance technicians receive automated notifications with work order details, priority level, and recommended completion timeline. Production managers are also alerted to potential schedule impacts.

Notification System

7

 OUT PUT

#### Schedule Optimized Maintenance Plan

Final maintenance schedule is generated and integrated into production planning system. All stakeholders receive updated timelines and resource allocations.

Production Scheduling System

Maintenance Management System



### Outputs

## AI Business OS

- Automated maintenance work orders
- Optimized maintenance schedule
- Production impact notifications
- Parts reservation confirmations



### Key Metrics

- Unplanned downtime reduction percentage
- Mean time between failures (MTBF)
- Maintenance cost per machine hour
- Production schedule adherence rate



### Tools & Integrations

- FANUC CNC Controls
- Predictive Analytics Engine
- Maintenance Management System
- Production Scheduling System
- Mastercam
- Inventory Management System
- Notification System

## AI Business OS

## AI Business OS

Actionable AI implementation strategies for business leaders ready to transform their operations.

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