



## AI Digital Workers &amp; AI Agents Capabilities in Manufacturing

**Production Line Quality Inspector Role Breakdown:** Human required on ~5% - 15% of work

Task Category	Handled by AI Digital Worker	Requires Human Oversight	Notes
Real-Time Defect Detection	✓	✗	AI uses vision systems to detect visual or structural defects
Dimensional Measurement & Tolerance Check	✓	✗	AI validates parts against digital blueprints
Pattern & Anomaly Recognition	✓	⚠	AI flags new or irregular issues; humans confirm root cause
Inspection Data Logging	✓	✗	Results are automatically tagged, stored, and synced with MES
Final Pass/Fail Decision for New Defects	✗	✓	Human confirms for non-standard or borderline defects

**Predictive Maintenance Technician Role Breakdown:** Human required on ~10% - 20% of work

Task Category	Handled by AI Digital Worker	Requires Human Oversight	Notes
Equipment Sensor Monitoring	✓	✗	AI collects real-time machine data (vibration, temperature, pressure)
Failure Prediction Modeling	✓	✗	AI forecasts downtime or part failure based on patterns
Maintenance Ticket Generation	✓	✗	Auto-generates alerts and work orders
Scheduling Maintenance Tasks	✓	⚠	AI recommends schedules; humans approve or shift
Root Cause Diagnosis	⚠	✓	AI provides insights, but technicians interpret complex failures

**Inventory Control Specialist Role Breakdown:** Human required on ~15% - 20% of work

Task Category	Handled by AI Digital Worker	Requires Human Oversight	Notes
Real-Time Inventory Tracking	✓	✗	RFID/barcode data auto-updated into ERP systems
Demand Forecasting	✓	⚠	AI forecasts based on sales, seasonality, and production
Reorder Point Calculation	✓	✗	AI adjusts thresholds dynamically
Inventory Discrepancy Alerts	✓	⚠	AI flags count mismatches; human audits edge cases
Manual Cycle Counts	✗	✓	Humans still perform physical counts periodically

**Procurement Coordinator Role:** Human required on ~10% - 20% of work

Task Category	Handled by AI Digital Worker	Requires Human Oversight	Notes
Supplier Price Comparison	✓	✗	AI scans vendor pricing and catalogs
Purchase Order Generation	✓	✗	AI triggers PO based on inventory and production plan
Vendor Performance Tracking	✓	✗	AI tracks delivery time, quality issues, etc.
Contract Review & Compliance	⚠	✓	AI flags clauses but humans interpret legal nuance
Escalation & Negotiation	✗	✓	AI routes to procurement team for high-value discussions



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#### Production Scheduler Role: Human required on ~10% - 20% of work

Task Category	Handled by AI Digital Worker	Requires Human Oversight	Notes
Schedule Optimization	✓	⚠	AI balances throughput, shift constraints, machine availability
Resource Allocation	✓	✗	Assigns people and machines to tasks based on availability
Downtime & Bottleneck Prediction	✓	✗	AI adjusts plans based on projected disruptions
Manual Override of Schedules	✗	✓	Planners adjust in response to customer or ops changes
Reporting & Forecasting	✓	✗	Generates dashboards and delivery estimates

#### Logistics & Shipping Coordinator Role: Human required on ~10% - 20% of work

Task Category	Handled by AI Digital Worker	Requires Human Oversight	Notes
Carrier Selection & Rate Comparison	✓	✗	AI compares delivery time, price, capacity
Load Optimization	✓	✗	AI calculates efficient pallet/container arrangement
Shipment Tracking & Alerts	✓	✗	Tracks shipments and notifies stakeholders of delays
Customs/Regulatory Docs Prep	✓	⚠	AI generates documents, but humans review special cases
Disruption Handling & Escalation	✗	✓	Human needed for urgent rerouting or damage claims

#### Time & Attendance / Workforce Administrator Role: Human required on ~5% - 15% of work

Task Category	Handled by AI Digital Worker	Requires Human Oversight	Notes
Clock-in/Clock-out Monitoring	✓	✗	AI verifies shift compliance and late/missed punches
PTO & Shift Swap Processing	✓	✗	Auto-approves based on policy and staffing rules
Workforce Forecasting	✓	⚠	Predicts labor needs based on production and seasonality
Labor Cost Reporting	✓	✗	Real-time labor cost analytics per line/shift
Dispute Resolution & Escalations	✗	✓	HR handles grievances, exceptions, or union issues

#### EHS Compliance Monitor Role: Human required on ~10% - 20% of work

Task Category	Handled by AI Digital Worker	Requires Human Oversight	Notes
Safety Violation Detection (PPE, Hazards)	✓	✗	Computer vision monitors work areas for violations
Incident Report Drafting	✓	✗	NLP summarizes events from sensor/camera input
Regulatory Rule Matching	✓	⚠	AI checks site practices against OSHA/ISO standards
Escalation of Critical Events	✓	✓	AI flags immediately; human initiates response
EHS Training Gap Identification	✓	✗	Flags individuals needing refresher training

#### Bill of Materials (BOM) Coordinator Role: Human required on ~10% - 20% of work

Task Category	Handled by AI Digital Worker	Requires Human Oversight	Notes
BOM Extraction from CAD/Specs	✓	✗	AI parses design files and identifies components
BOM Validation Against ERP	✓	⚠	AI compares structure and part numbers for consistency
Version Control & Change Tracking	✓	✗	Tracks and updates BOM revisions
Flagging Incomplete BOMs	✓	✗	Detects missing items or incomplete configurations
Cross-Referencing Alt Suppliers	✓	⚠	AI suggests options; buyer confirms substitutions



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**Firmware-to-Software Retrofit Engineer Role:** Human required on ~10% - 20% of work

Task Category	Handled by AI Digital Worker	Requires Human Oversight	Notes
Legacy Code Parsing & Refactoring	✔	⚠	AI identifies structure, dependencies, and outdated patterns
Language Translation (e.g., C → Python)	✔	⚠	AI converts code syntax; human checks logic fidelity
Modularization Suggestion	✔	⊘	AI suggests breakdown into reusable components
Dependency Mapping	✔	⊘	Analyzes interlinked code and required libraries
Human QA & Integration Testing	⊘	✔	Final testing and debugging stay with engineers