



Mine Digital Transformation & Automation Readiness Checklist 2026

Strategic Alignment & Digital Roadmap

Evaluate the alignment of automation initiatives with overall mine production goals, long-term scalability, and budget availability for 2026.

Digital Maturity Level

- ☐ Initial (Manual Processes)
- ☐ Developing (Digitizing Records)
- ☐ Integrated (Connected Systems)
- ☐ Optimized (Autonomous/AI-Driven)

Primary Digital Transformation Objective

Write something...

Roadmap Implementation Deadline

Enter date...

Allocated Digital Transformation Budget (USD)

Enter a number...

Strategic Alignment Justification

Write something...

Digital Roadmap Documentation

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Strategy Stakeholder Approval

Connectivity & Network Infrastructure

Audit the reliability and coverage of underground and surface communication networks, including LTE, 5G, Wi-Fi, and satellite connectivity.

Primary Communication Network Type

- ☐ Private LTE/5G
- ☐ Wi-Fi Mesh
- ☐ Radio/Telemetry
- ☐ Satellite

Network Signal Strength (RSSI) Average

Enter a number...

Network Coverage Dead Zones Identified

- ☐ Underground Development Ends
- ☐ Remote Pit Perimeters
- ☐ Tailings Storage Facility
- ☐ Processing Plant Interior

Connectivity Gap Analysis & Mitigation Plan

Write something...

Last Network Infrastructure Audit Date

Enter date...

Network Topography & Coverage Map

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Data Acquisition & Sensor Integration

Assess the deployment and-maintenance of IoT sensors, telemetry systems, and real-time monitoring devices on mobile fleets and fixed plant equipment.

Installed Sensor Types

- ☐ Gas & Air Quality Sensors
- ☐ Vibration & Acoustic Sensors
- ☐ Pressure & Flow Meters
- ☐ GPS/GNSS Tracking Units
- ☐ Temperature & Humidity Probes
- ☐ Geotechnical Movement Sensors

Network Connectivity Status

- ☐ Fully Operational
- ☐ Intermittent/Unstable
- ☐ Planned Maintenance
- ☐ Critical Failure/Offline

Sensor Calibration Interval (Days)

Enter a number...

Last Calibration Date

Enter date...

Data Integration Gaps & Observations

Write something...

Sensor Calibration Certificates

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Inspector Verification



Autonomous Fleet & Robotics Readiness

Verify the compatibility of autonomous drilling, hauling, and loading systems with existing mine traffic management and safety protocols.

Autonomous Equipment Types Active on Site

- ☐ Autonomous Haul Trucks
- ☐ Autonomous Drilling Rigs
- ☐ Autonomous Loaders
- ☐ Automated Conveyor Systems
- ☐ Remote Controlled Dozers

Level of Automation Maturity

- ☐ Manual Operation
- ☐ Tele-operation (Remote Control)
- ☐ Semi-Autonomous
- ☐ Fully Autonomous

Last Autonomous System Software Update

Active Sensor Count per Autonomous Unit

Safety Interoperability Notes

Automation Safety Certification Documents



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Fleet Automation Supervisor Approval

Cybersecurity & Data Integrity

Review protocols for protecting Industrial Control Systems (ICS), securing remote access points, and ensuring the integrity of automated data streams.

Security Protocols Implemented

- ☐ Multi-Factor Authentication (MFA)
- ☐ End-to-End Encryption
- ☐ Network Segmentation (OT/IT Isolation)
- ☐ Intrusion Detection Systems (IDS)
- ☐ Regular Firmware/Software Patching

Identified Cybersecurity Vulnerabilities

Write something...

Last Security Audit Date

Enter date...

Incident Response Plan Document

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Data Backup Frequency

- ☐ Real-time
- ☐ Hourly
- ☐ Daily
- ☐ Weekly

IT Security Officer Verification

Software & Integrated Operations Center (IOC) Capability

Examine the interoperability of Mine Management Systems (MMS), Dispatch software, and Centralized Control Room monitoring capabilities.

Primary Mine Management System (MMS) in Use

- ☐ Modular Mining
- ☐ Hexagon Mining
- ☐ Deswik
- ☐ RPMGlobal
- ☐ Other

Integrated Operations Center (IOC) Monitoring Capabilities

- ☐ Real-time Fleet Tracking
- ☐ Pit-to-Plant Telemetry
- ☐ Geotechnical Sensor Monitoring
- ☐ Automated Dispatch Control
- ☐ Environmental Monitoring Dashboard

Software Interoperability Assessment

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System Latency Threshold (ms)

Enter a number...

Software Architecture Diagram



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IT/OT Infrastructure Lead Approval

Workforce Digital Literacy & Upskilling

Audit training programs designed to transition traditional operators into digital-first roles and manage human-machine interface (HMI) complexities.

Digital Competencies Assessed

- ☐ Basic Computer Literacy
- ☐ Data Interpretation & Analytics
- ☐ Remote Operation Interface Management
- ☐ Automated System Troubleshooting
- ☐ Cybersecurity Awareness

Percentage of Workforce Trained

Enter a number...

Last Training Session Date

Enter date...

Skill Gap Analysis & Training Needs

Write something...

Training Certification Records



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Training Manager Verification

Edge Computing & Data Processing Capacity

Evaluate the capability of onsite edge computing nodes to process high-frequency sensor data without reliance on high-latency cloud connections.

Primary Edge Computing Deployment Level

- ☐ Fully Decentralized (On-device processing)
- ☐ Localized (Site-based Edge Servers)
- ☐ Hybrid (Edge + Cloud Integration)
- ☐ Centralized (Cloud-dependent)

Available On-site Storage Capacity (Terabytes)

Enter a number...

Data Streams Monitored at Edge

- ☐ High-frequency Vibration Data
- ☐ Real-time Telemetry
- ☐ HD Video/CCTV Feeds
- ☐ Lidar/Scanning Point Clouds
- ☐ Environmental Sensor Logs

Edge Processing Latency Constraints

Write something...

Network Topology & Edge Architecture Diagram

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Technical Lead Verification

Digital Twin & Predictive Modeling Maturity

Assess the availability of high-fidelity 3D mine models and the use of predictive analytics for maintenance and geotechnical forecasting.

Current 3D Model Fidelity Level

- ☐ Low (Static 2D/3D Maps)
- ☐ Medium (Periodic Survey Updates)
- ☐ High (Real-time Integrated Digital Twin)

Active Predictive Modeling Use Cases

- ☐ Predictive Equipment Maintenance
- ☐ Geotechnical Failure Forecasting
- ☐ Ventilation Flow Optimization
- ☐ Ore Grade Estimation
- ☐ Production Throughput Simulation

Data Latency Threshold (Seconds)

Identified Gaps in Digital Twin Accuracy

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Latest Digital Model Validation Report

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Digital Transformation Lead Approval

Change Management & Operational Adoption

Review the organizational framework for managing the cultural shift toward automated workflows and real-time decision-making processes.

Stakeholder Groups Engaged

- ☐ Operations Management
- ☐ On-site Engineering
- ☐ Maintenance Teams
- ☐ IT & Automation Specialists
- ☐ Health & Safety (HSE) Officers
- ☐ Frontline Operators

Training Gap Analysis

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Current Level of Digital Maturity

- ☐ Manual/Paper-based
- ☐ Digitized/Data-logging
- ☐ Semi-Automated
- ☐ Fully Integrated/Autonomous

Percentage of Workforce Trained

Enter a number...

Digital Transformation Training Plan

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Change Lead Approval

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🏁 Finish

🔧 Generate Sample Report