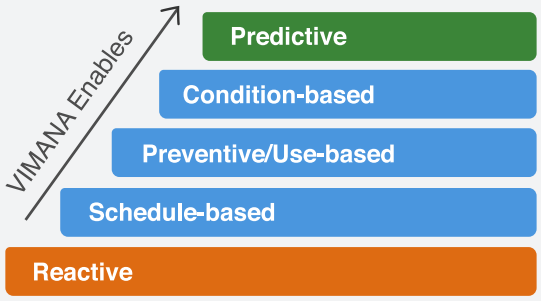
VIMANA

VIMANA Maintain

Predictive Maintenance Analytics for Manufacturing

Improve your factory's asset maintenance processes and reliability with VIMANA's ready-to-use, end-to-end solution for predictive maintenance.

VIMANA Maintain provides real-time visibility to asset health, helps to predict equipment and tooling failures before they occur and avoid over maintaining assets by planning preventive maintenance schedules based on data-driven insights.



VIMANA Maintain is an End-to-End Solution that:

- **Collects and transforms large volumes of data from multiple sources:** sensors, machines, and manufacturing and IT system data.
- **Provides ready-to-use analysis and visualizations based on usage, conditions, and predictive algorithms** that deliver asset health intelligence to better manage and prioritize your maintenance activities.
- **Automates alerts** and triggers maintenance activities by **integrating with your existing maintenance systems** to action the data.

Realize Immediate Value with VIMANA Maintain

Boost Asset Availability and Reliability

Reduce unplanned downtime by 50% by predicting machine failures before they occur and improve overall OEE.

Reduce Maintenance Costs

Decrease labor, tooling, and spare part costs by 40% by eliminating unnecessary preventive maintenance activities with data-driven scheduling.

Improve Maintenance Workforce Productivity and Effectiveness

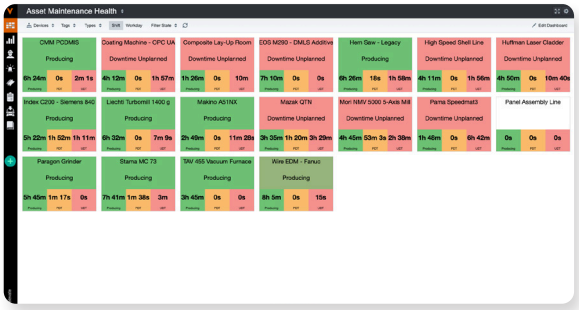
Increase maintenance staff productivity by 55% by optimizing staffing levels and scheduling, reducing MTTR and MTBF with maintenance analytics and technician productivity tools.

Optimize Maintenance Processes

Trigger maintenance activities based on analytics and automate processes and workflow from insight to execution with bi-directional systems integration.

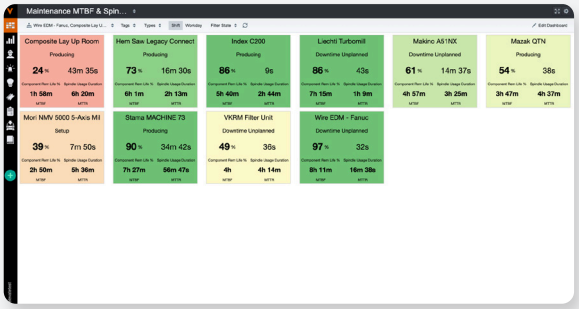
VIMANA Maintain Capabilities

Visualize and Monitor / Customizable Real-time Dashboards



Remote Monitoring

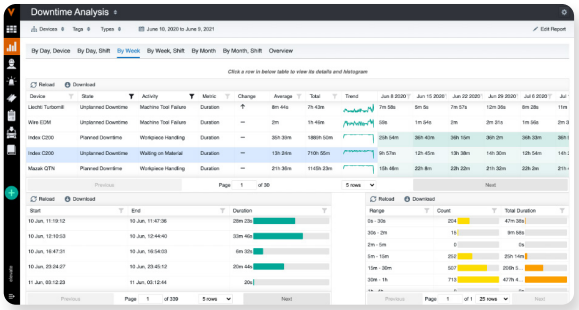
Ensure rapid response to maintenance issues with real-time visibility into machine status and health with pre-built, ready-to-use dashboards. No code, drag and drop capabilities enable you to build and customize dashboards for specific use cases.



KPI Metrics

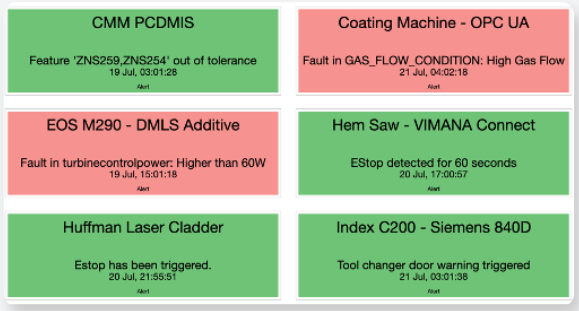
Establish a baseline, monitor, and compare relevant KPIs to include the duration and frequency of downtime, faults, and warnings. Monitor remaining useful life (RUL), MTTR, MTBF, integrated with production metrics: OEE, utilization, and quality parts produced to guide performance improvement.

Analyze & Predict / Historical Reports, Machine Learning and AI-Driven Analytsis



Root Cause Analysis

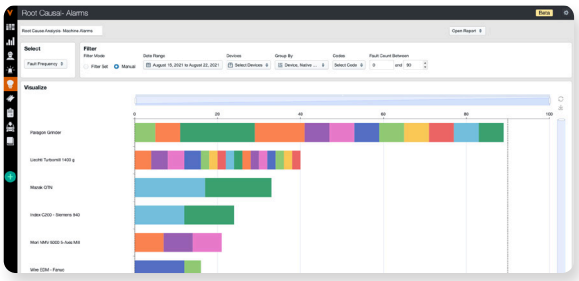
Track machine downtime and get insights into failures: what happened, for how long, and why with out-of-the-box, highly configurable reports that deliver intelligence to maintenance teams that helps to expedite repairs.



Fault Detection

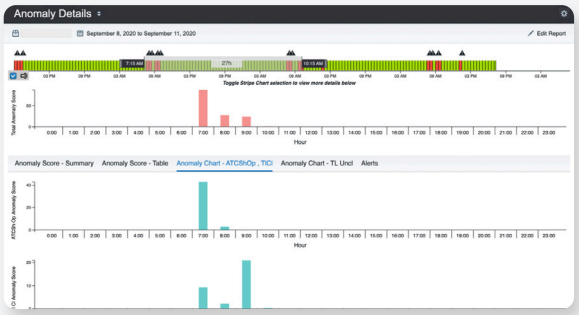
Understand real-time faults and warnings for machines to determine where immediate action is necessary.

Analyze and Predict Continued



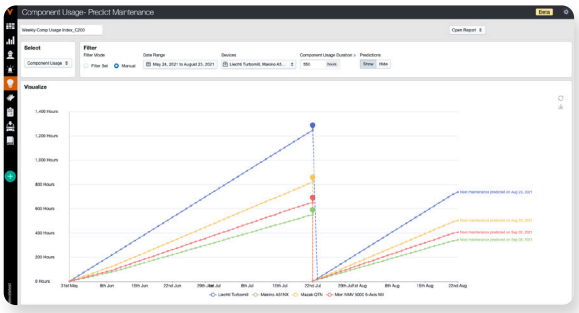
Machine Alarms and Warning Analysis

Proactively create maintenance activities when parameters like fault count and outage duration of critical alarms reach unacceptable levels.



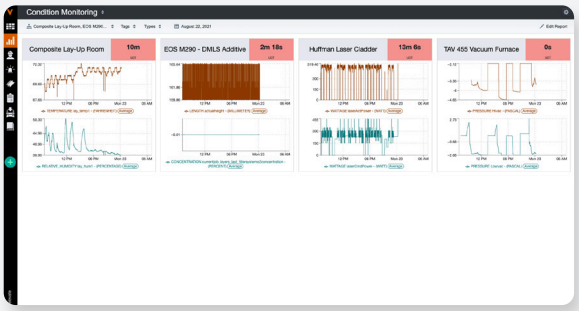
Anomaly Detection

Define algorithms for generating Predictive Maintenance triggers based on sensor data to detect abnormal machine behavior before product quality degradation or asset failure.



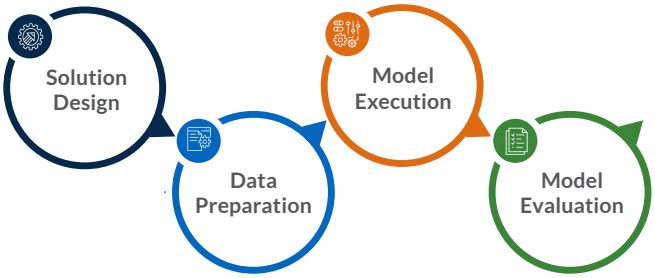
Usage-Based Maintenance

Track usage based on product type, operation, and the historical analysis of the assets' useful life. Optimize preventive maintenance staffing and schedule triggered by the remaining useful life of the asset or component.



Condition-Based Maintenance

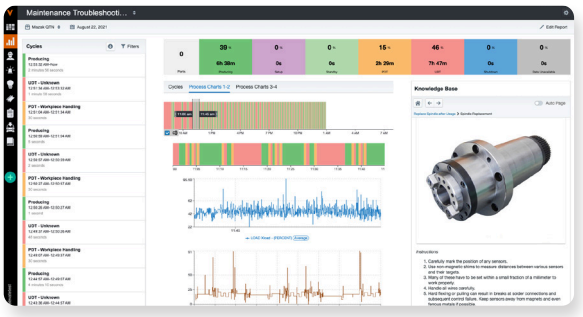
Monitor and analyze process condition variation over time. Identify patterns affecting machine maintenance. Then trigger early warnings of parameters beyond established thresholds to better plan maintenance activities.



Predictive Maintenance Machine Learning

Co-innovate and build custom models to predict downtime before it occurs. Predict equipment downtimes and machine faults, tooling failures, and quality risks.

Communicate & Empower Action



Productivity Tools

Manage maintenance activities, collaborate, solve problems, and build a knowledge base to improve your maintenance team's productivity.

Alerts and Notifications

Automatically and proactively notify stakeholders in real-time on asset health parameters crossing established thresholds to ignite action, control performance, and manage process change.

Ticketing System for Shop Floor Communications

Communicate and track maintenance issues and requests across the workforce for rapid, closed-loop problem-solving and informing process change.

Digital Logbook

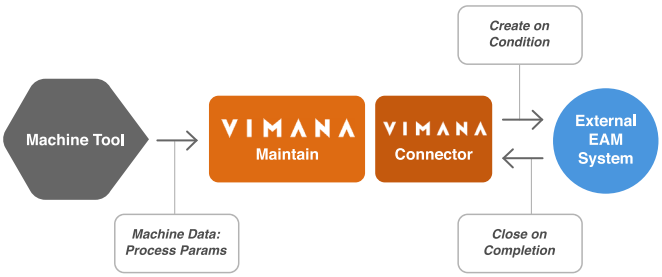
Enables paper to digital migration of the operators' tribal knowledge and provides information to technicians on the operating condition of assets.

Dynamic Work Instructions

Use dynamic work instructions to provide maintenance or process instructions on-demand for operators/engineers/technicians to close skill gaps, reduce errors and improve workforce productivity.

Integrate & Automate

Enable end-to-end solutions from IoT data collection and maintenance analytics for insights that power manufacturing execution software.



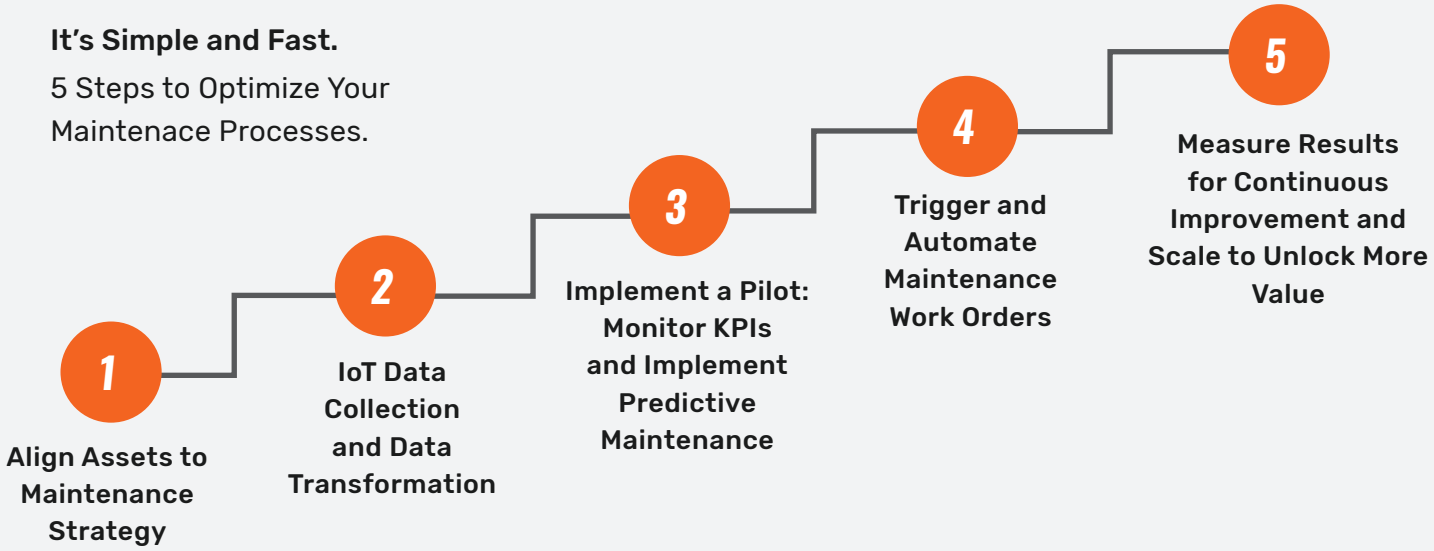
Bi-directional Integration of Systems

Use secure APIs and connectors to integrate with other systems (MES for production planning and scheduling, ERP for inventory and financial management, EAM/CMMS for maintenance execution) to streamline workflows, minimize redundancy, and automate manufacturing and business processes. VIMANA's APIs provide secure bi-directional access to information and pull data from external systems into VIMANA and push data from VIMANA into external systems. Maintenance data is exchanged with the connectors for alerts, tickets, anomalies, faults, and metrics (MTBF, MTTR) to enable a closed-loop to activity completion.

How to Implement Predictive Maintenance In Your Factory

It's Simple and Fast.

5 Steps to Optimize Your Maintenace Processes.



1 Align Assets to Maintenance Strategy

Classify your equipment based on asset type, time to repair, production risk, and cost implication. Then map each category **to the most effective maintenance strategy** (reactive, usage-based, condition-based, or predictive). These requirements will **define the information you need so you can trace it back to the data sources.**

2 IoT Data Collection and Data Transformation

First, identify the software and hardware needed to connect and collect the data. Capture all the data you need, not just data from sensors or SCADA systems. Ensure you capture greenfield and brownfield machine data and integrate with other systems i.e., CMMS, EAM, ERP, to bring context to your data. The data must be transformed and unified for downstream analysis.

3 Implement a Pilot: Monitor KPIs and Implement Predictive Maintenance

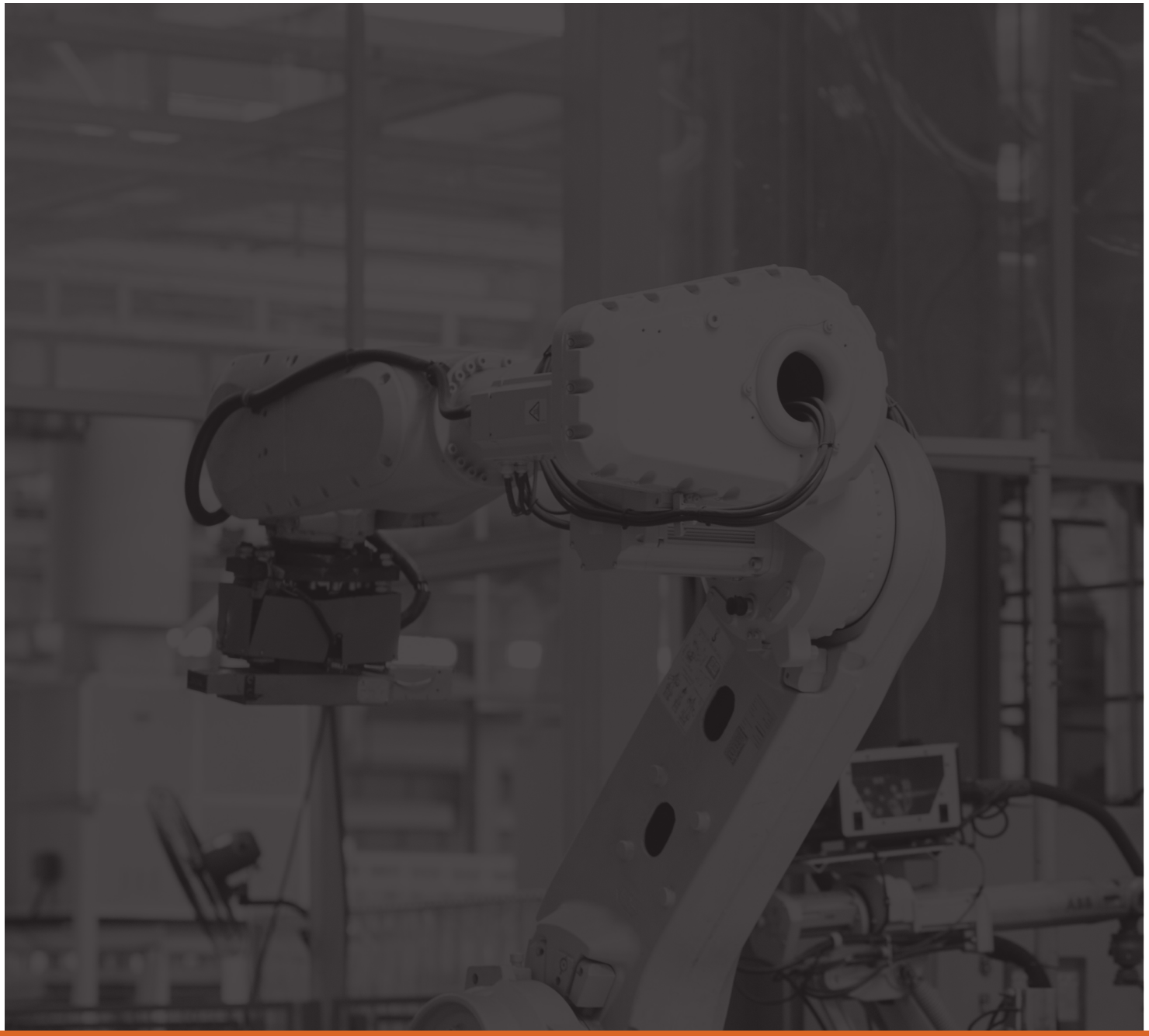
Use out-of-the-box dashboards, reports, and root cause analysis tools for visibility and analysis of maintenance processes to manage, control, and continuously improve asset performance and technician productivity. Monitor usage, critical failure modes, and condition parameters of assets, components, and sub-systems. Create alerts based on use to trigger preventive maintenance and conditions that provide early warnings of risk.

4 Trigger and Automate Maintenance Work Orders

Use Connectors to integrate existing systems to enable end-to-end processes from maintenance analytics to process execution. Categorize by the urgency level and automatically trigger work orders at condition threshold to CMMS and EAM systems.

5 Measure Results for Continuous Improvement and Scale to Unlock More Value

Measure results to include: cost reduction from labor and parts, reduced planned and unplanned downtime, improved MTTR, MTBF, and OEE for continuous improvement. Then, replicate PdM program success and scale it to your factory assets, other locations, and use cases. Build new predictive maintenance models customized to your operation and extend your value.



VIMANA

VIMANA helps industrial businesses transform their operation and grow revenue with industrial analytics software, services, and solutions for Smart Manufacturing, asset maintenance & reliability, and IoT connected products.

Learn more at **www.govimana.com**