Introduction

The Nanoprecise - MaintainX integration connects **machine condition intelligence** from Nanoprecise with the **maintenance execution workflows** in MaintainX. It allows anomalies, thresholds, and key parameters identified by Nanoprecise to be automatically recorded in MaintainX as **meter readings** or **work orders**, ensuring that the moment a performance deviation is detected, it can be acted upon inside the maintenance system.

This integration bridges the gap between *diagnosis* and *action*, closing the loop from sensor to work execution.

Integration Overview

The integration operates through a secure **API bridge** between Nanoprecise's cloud platform and MaintainX's system.

It supports:

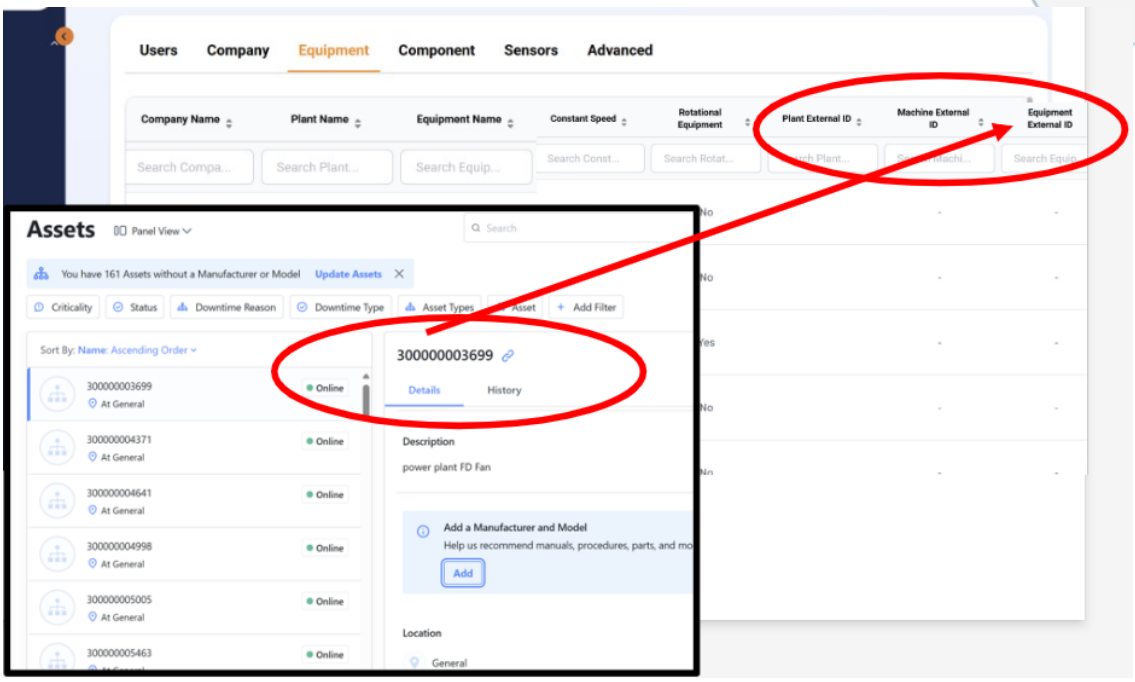
- **Automatic creation of work orders** based on Nanoprecise alerts.
- **Manual creation** of work orders directly from the Nanoprecise interface via a one-click action.
- **Continuous data flow** of condition and energy metrics into MaintainX for visibility, trend tracking, and rule-based workflow triggers.

How It Works

The data and workflow flow can be summarized in four functional stages:

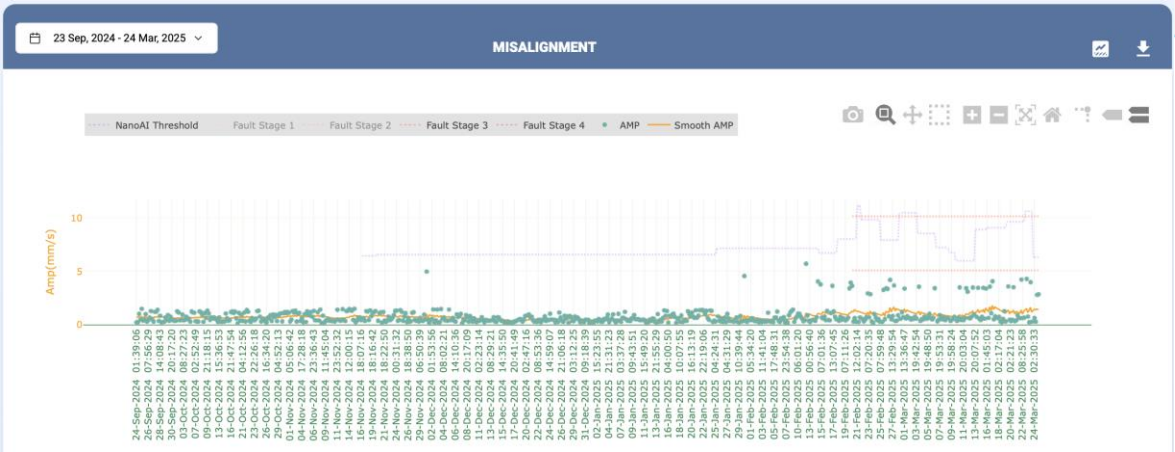
Step 1 – Asset Mapping

Each MaintainX asset is linked to its corresponding Nanoprecise asset through a unique **Asset ID mapping**. This ensures that all readings, alerts, and work orders sync to the correct equipment record across both systems.



Step 2 – Data Transfer & Meter Readings

- Nanoprecise's 6-in-1 sensors (vibration, acoustics, temperature, RPM, magnetic flux, humidity) send raw data to the Nanoprecise cloud.
- Condition Intelligence analyzes this data in real time to detect performance anomalies or abnormal patterns.
- The integration retrieves this processed information via secure API calls and posts it as **meter readings** within MaintainX under the mapped asset.
- These readings maintain timestamps, value units, and source integrity to align with the customer's configured maintenance KPIs.



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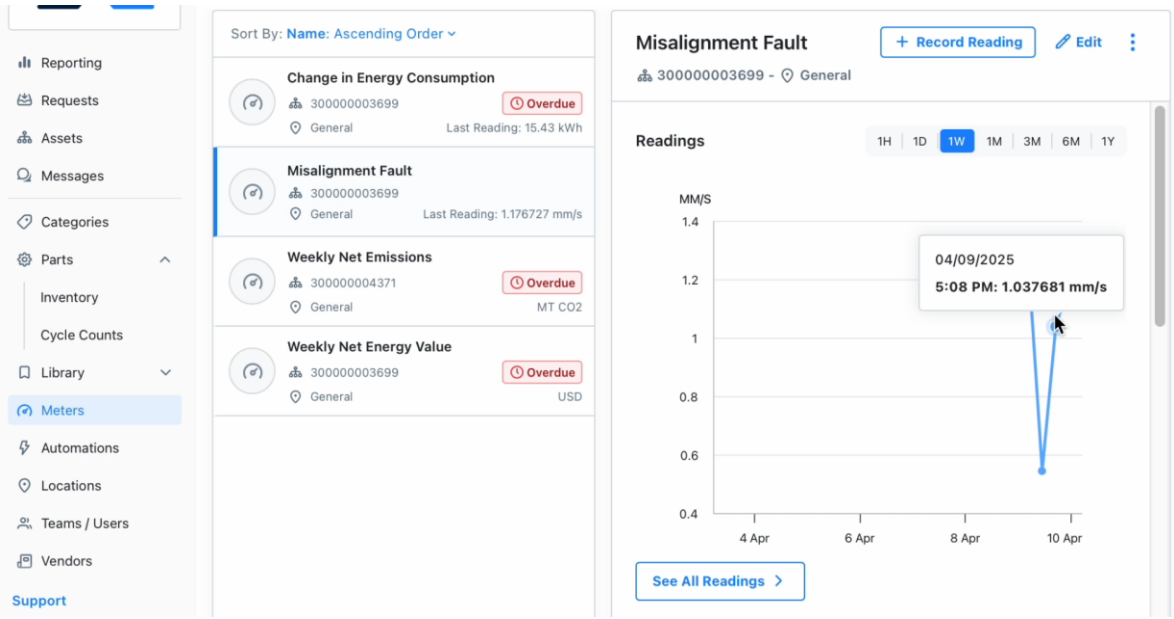


Step 3 – Work-Order Generation

There are **two modes** for work-order creation in this integration:

(a) Automated Work Orders (Triggered by Rules)

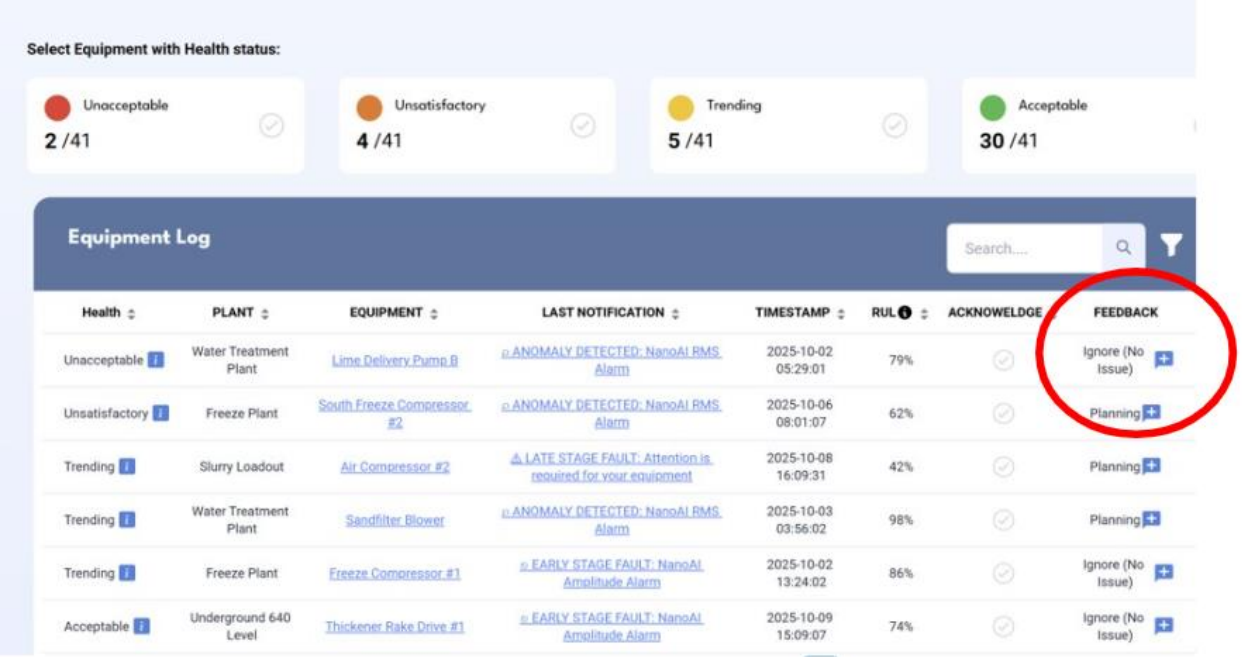
- MaintainX workflows are configured to respond when a meter reading exceeds a set threshold.
- When a Nanoprecise data point pushes a parameter (e.g., vibration, temperature, energy deviation) beyond the limit:
    - MaintainX automatically updates the asset's operational state, for example, from *Online* to *High Energy*.
    - A **work order is created automatically**, assigned to the relevant maintenance team or role.
    - The work order includes contextual data such as the asset name, timestamp, anomaly parameter, and suggested action source (Nanoprecise).

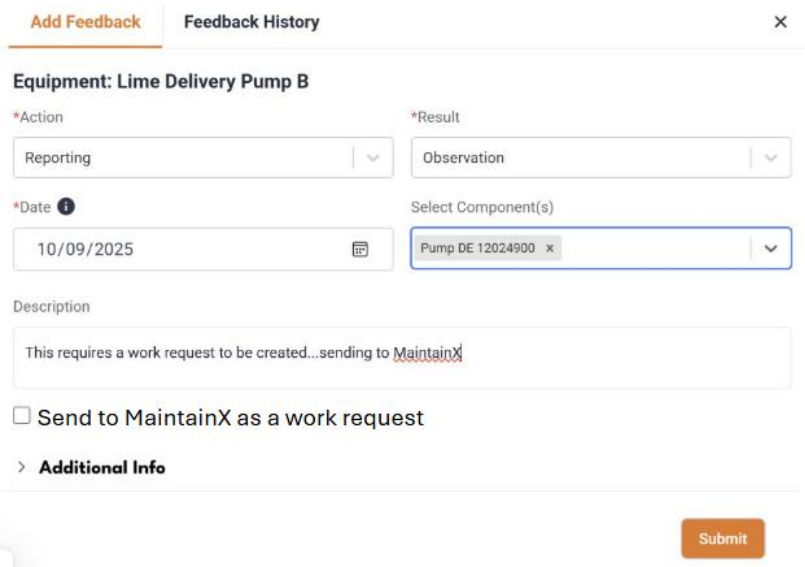
(b) Manual Work Orders (Created from Nanoprecise Insight View)

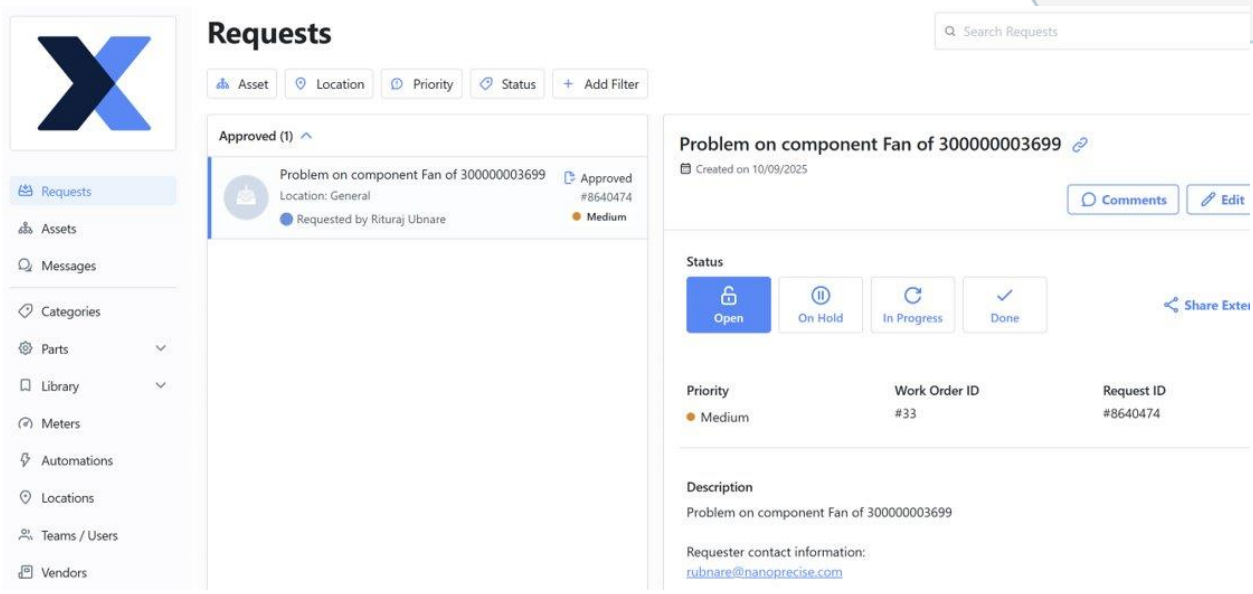
- Within the Nanoprecise dashboard, a technician or engineer can manually trigger a work order when reviewing machine data.
- By clicking the **"+" (plus)** icon beside the equipment feedback, and choose "send to MaintainX" option. A **MaintainX work order is generated instantly** via API.
- The system pre-populates the work order with key details:
    - Asset ID
    - Fault type or alert category (e.g., imbalance, misalignment, bearing wear)
    - Description field containing the Nanoprecise alert message
    - Timestamp of the event
- Once submitted, the work order appears natively in MaintainX and follows the same workflow as any standard job (assignment, completion, closure, feedback).

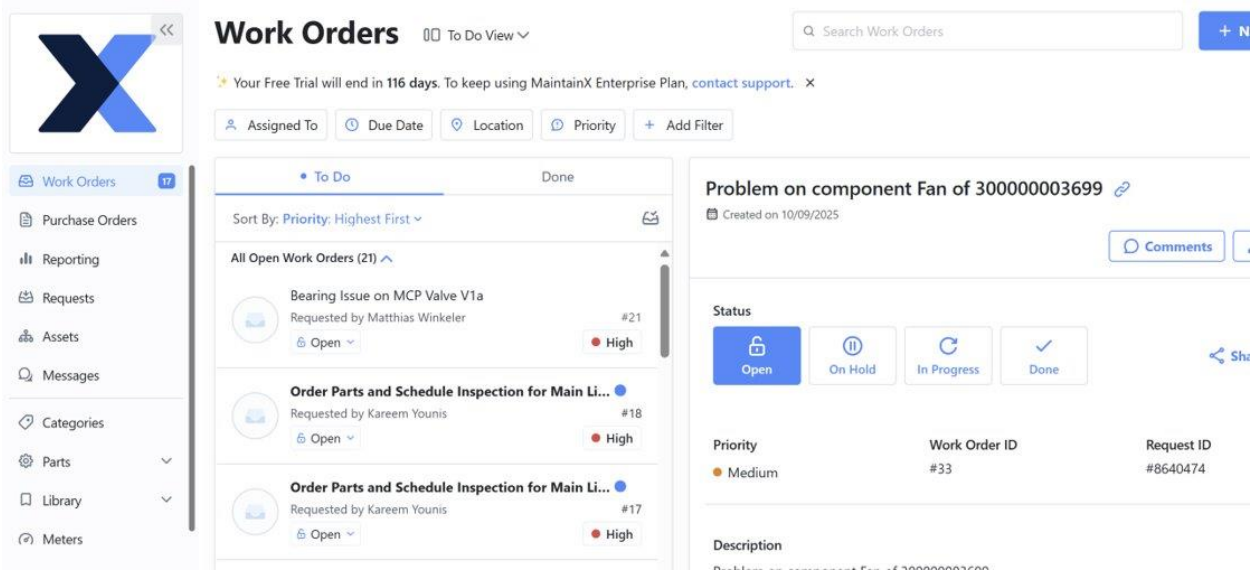
This dual-path design ensures both **automation** and **operator control**, depending on how customers prefer to trigger maintenance actions.

Nanoprecise
Prediction with Precision









Step 4 – Synchronization and Continuous Updates

- The integration synchronizes periodically to ensure that meter readings and asset states in MaintainX remain current.
- When the status of a work order changes (e.g., completed, in progress), MaintainX retains the traceability back to the original Nanoprecise insight.

- This allows customers to measure outcomes (e.g., energy restored, vibration normalized) directly against condition-based triggers.

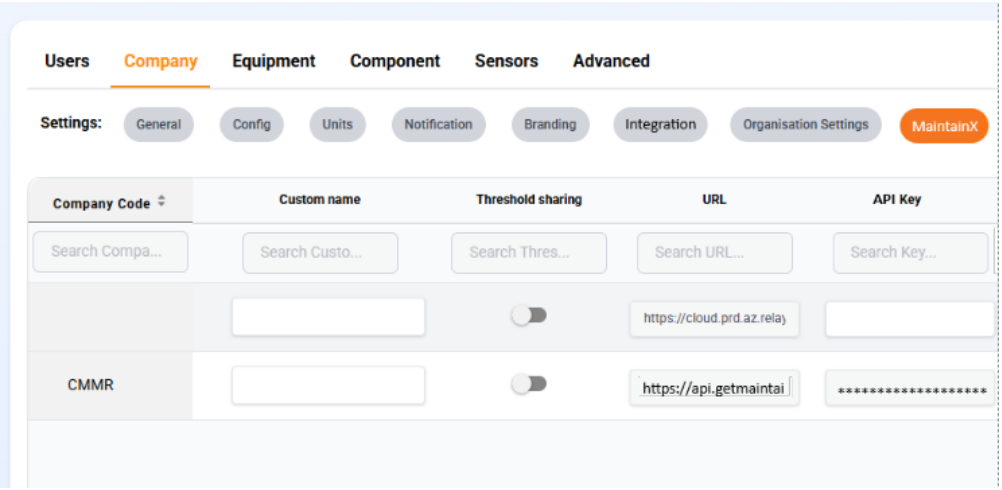
4. Data Flow Summary

Stage	Source	Destination	Description
1. Data Collection	Nanoprecise Sensor	Nanoprecise Cloud	Collects 6-in-1 data parameters continuously.
2. Analysis	Nanoprecise Cloud	Condition Intelligence	Processes and detects anomalies or energy deviations.
3. Data Push	Nanoprecise API	MaintainX API	Transfers readings and alert data securely.
4. Meter Recording	MaintainX	MaintainX	Posts readings under mapped assets.
5. Work-Order Creation	Nanoprecise or MaintainX	MaintainX	Automatically or manually creates work orders.
6. Feedback Loop	MaintainX	Nanoprecise (optional)	Completion data can be used for analytics and reporting.

5. Configuration & Deployment

Initial Setup (Recommended to do using Nanoprecise team)

1. Define and map assets between systems using shared identifiers.
2. Configure MaintainX API credentials and workflow thresholds.
3. Set up reading categories (e.g., vibration, velocity, temperature).
4. Enable work-order creation pathways.



Testing and Validation

- Validate data accuracy and time stamps for sample assets.
- Confirm both meter reading and work-order creation logic through demo runs.
- Adjust threshold levels and assignment rules as needed.

Scaling

- Once validated, configuration templates can be reused for additional sites or customers.
- The same logic can support hundreds of assets via standardized mapping scripts.

6. Security & Data Handling

- All communication between Nanoprecise and MaintainX is encrypted (HTTPS/TLS 1.2+).
- Authentication uses MaintainX API keys scoped to the specific customer instance.
- Only operational data is exchanged, no personal or sensitive user data.
- Audit logs on both sides capture every API transaction for full traceability.

7. Example Scenario

1. Nanoprecise detects elevated vibration on Pump #4.
2. Condition Intelligence flags a potential imbalance and updates the data stream.
3. The MaintainX integration receives the alert.
4. Meter readings show vibration levels above the configured limit.
5. MaintainX automatically creates a work order:

a. **Title:** Pump #4 – High Vibration Detected
b. **Triggered by:** Nanoprecise Insight
c. **Description:** "Condition Intelligence detected elevated vibration beyond limit at 15:32 hrs."

6. The technician receives the work order, completes the inspection, and closes it in MaintainX.
7. Updated asset state and corrective notes remain logged for reporting and energy tracking.

Ready to Integrate? Contact Nanoprecise.