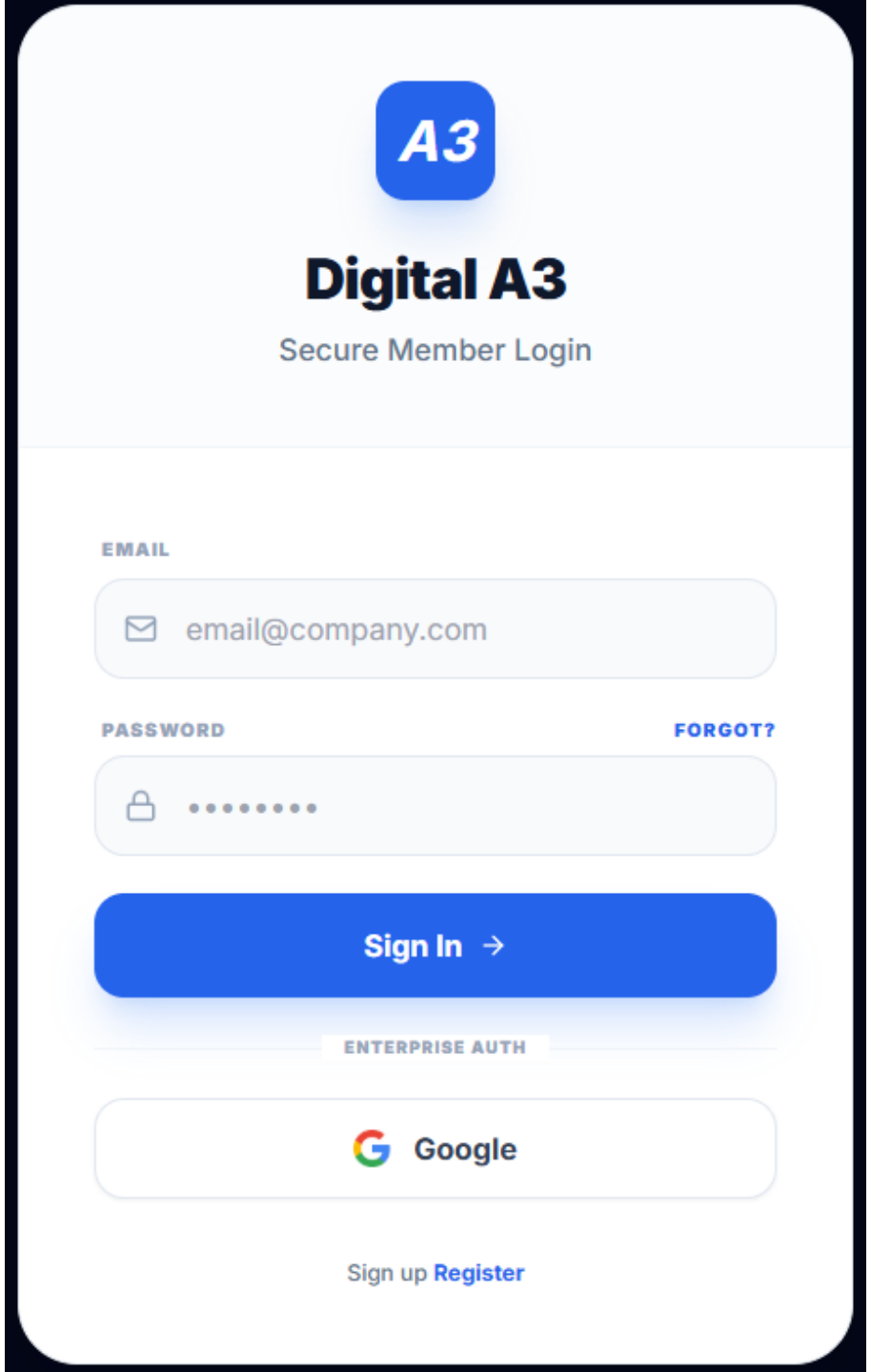

A3
Digital A3
Secure Member Login
EMAIL
email@company.com
PASSWORD
FORGOT?
Sign In
ENTERPRISE AUTH
Google
Sign up Register

Executive Control

Strategic oversight for organizational problem-solving.

+ LAUNCH INITIATIVE

A3S

INITIATIVES TRACKED
9
TOTAL A3 REPORTS IN YOUR REPOSITORY

STEPS

VERIFICATION PROGRESS
18%
13/72 A3 STEPS VERIFIED

ACTIONS

ACTION COMPLETION
10%
10/100 ACTIONS COMPLETE

Problem Solving Inventory

8 OPEN INITIATIVES

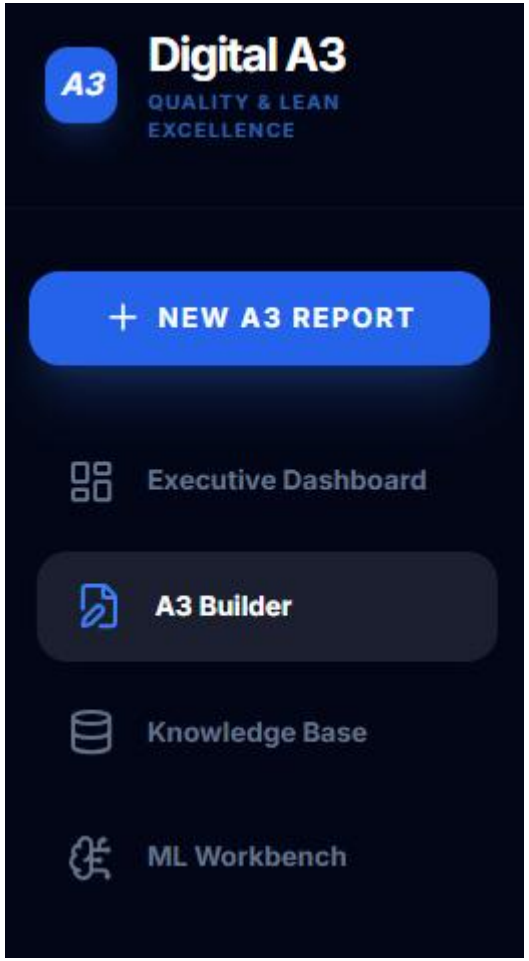
STRATEGIC INITIATIVE	TIMELINE	PHASE STATUS	ACTIONS	UTILITY
A3 GH-M1 CNC-07 Unplanned Downtime ... KEMAL DORAK		COMPLETE 8/8 STEPS VERIFIED	24%	
A3 Inventory Record Accuracy to Reduce... KEMAL DORAK		DRAFT 0/8 STEPS VERIFIED	0%	
A3 Cycle Time improvement for Commer... KEMAL DORAK		DRAFT 0/8 STEPS VERIFIED	0%	
A3 Improve Unplanned Outages in Subst... KEMAL DORAK		DRAFT 0/8 STEPS VERIFIED	0%	
A3 DEMO test KEMAL DORAK		DRAFT 1/8 STEPS VERIFIED	3%	
A3 Optimizing Batch Yield in Bioreactor ... KEMAL DORAK		DRAFT 0/8 STEPS VERIFIED	14%	
A3 Reducing Weld Defect Rates on Asse... KEMAL DORAK		DRAFT 3/8 STEPS VERIFIED	50%	
A3 CNC Milling Diameter Variation Reduc... KEMAL DORAK		DRAFT 1/8 STEPS VERIFIED	0%	
A3 Reduction of Expedited Air Shipment... KEMAL DORAK		DRAFT 0/8 STEPS VERIFIED	0%	

Methodology Funnel

EXECUTION INTEGRITY

You have 9 active initiatives. Maintain focus on phase verification to ensure sustainable organizational learning.

DEVELOPED BY KEMAL DORAK



Smart Methodology Starter

Initialize your A3 with AI Intelligence or a custom canvas.

Project with AI Support

Describe your problem and let AI architect the solution flow.

PROBLEM DESCRIPTION

e.g. The Gearbox Housing machining line is a bottleneck process... over the last 8–12 weeks experienced frequent unplanned downtime on CNC-07...

GENERATE AI DRAFT

START BLANK CANVAS

KNOWLEDGE TRANSFER STARTERS

Industrial & Manufacturing
BENCHMARKED STRUCTURE

Pharmaceuticals & Biotech
BENCHMARKED STRUCTURE

Energy & Utilities
BENCHMARKED STRUCTURE

Logistics & Supply Chain
BENCHMARKED STRUCTURE

Financial Services
BENCHMARKED STRUCTURE

Academic Research
BENCHMARKED STRUCTURE

DEVELOPED BY KEMAL DORAK

A3

GH-M1 CNC-07 Unplanned Downtime Reduction

STEPPER | SPLIT VIEW | REPORT | EXPORT

STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5 | STEP 6 | STEP 7 | STEP 8

1. Problem Clarification

2 EVIDENCE ARTIFACTS

UPLOAD ATTACHMENT

Step 1: Problem Clarification

Define the current situation and the performance gap.

AI PROBLEM OPTIMIZER

Detailed problem description

A3 NARRATIVE - 1) CONTEXT / BUSINESS CASE

The Gearbox Housing Machining Line (Line GH-M1) at Nordic Drives Plant – is experiencing frequent unplanned downtime on CNC-07, a critical constraint operation. This directly impacts downstream assembly (FA-02) due to material shortages, changeover inefficiencies, and expedited recovery actions. The line is failing to meet planned output, leading to increased costs and delivery risks.

NARRATIVE BLOCK

PRIMARY METRIC NAME

Unplanned Downtime

UNIT OF MEASURE

hours/week

BASELINE ACTUAL

6,2

TARGET CONDITION

2

QUANTIFIED GAP

4.2

HOURS/WEEK

VARIANCE

IMPACT MAGNITUDE

ECONOMIC LOSS

Lost throughput and recovery...

Lost throughput and recovery actions are costing €18,000/week.

CAPACITY / TIME

4.5 hours / week

Assembly line FA-02 starved 4.5 hours/week; 24 hours/week

QUALITY / RISK

Increased risk of missed sch...

Increased risk of missed schedules impacting assembly lot deliveries.

UNVERIFY STEP

Previous

DEVELOPED BY KEMAL DORAK

Next Step

A3

GH-M1 CNC-07 Unplanned Downtime Reduction

STEPPER | SPLIT VIEW | REPORT

EXPORT

STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5 | STEP 6 | STEP 7 | STEP 8

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NARRATIVE BLOCK

IMPACT MAGNITUDE

PRIMARY METRIC NAME

UNIT OF MEASURE

ECONOMIC LOSS

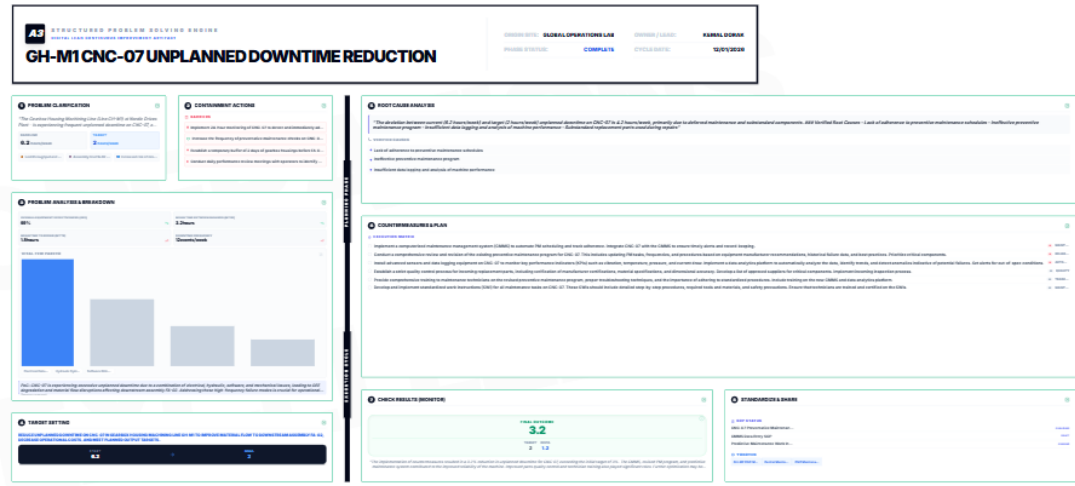
UNVERIFY STEP

Previous

Next Step

LIVE REPORT PREVIEW

Fit | 37%



DEVELOPED BY KEMAL DORAK

A3

GH-M1 CNC-07 Unplanned Downtime Reduction

STEPPER | SPLIT VIEW | REPORT

EXPORT

STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5 | STEP 6 | STEP 7 | STEP 8

2. Containment Actions

UPLOAD ATTACHMENT

EMERGENCY RESPONSE BOARD

STEP 2: QUARANTINE & CONTAINMENT

AI SUGGEST QUARANTINE

NEW STOP-GAP

ACTIVE STATUS

Implement 24-hour monitoring of CNC-07 to detect and immediately address abnormal system errors.

Maintenance ... 15/07/2024

ACTIVE

VERIFIED STATUS

Increase the frequency of preventative maintenance checks on CNC-07 to every 48 hours.

Maintenance ... 12/07/2024

VERIFIED

ACTIVE STATUS

Establish a temporary buffer of 2 days of gearbox housings before FA-02 to mitigate material starvation.

Production Pl... 10/07/2024

ACTIVE

ACTIVE STATUS

Conduct daily performance review meetings with operators to identify early warning signs of machine failure.

Production M... 08/07/2024

ACTIVE

DRAFT STATUS

Verify proper execution of the standard operating procedure (SOP) for CNC-07 startup and shutdown processes.

Quality Assu... 11/07/2024

DRAFT

Barrier Health

1 of 5 containment verified. Risk reduction: 20%.

SYSTEM MONITORING ACTIVE

UNVERIFY STEP

Previous

Next Step

A3

GH-M1 CNC-07 Unplanned Downtime Reduction

STEPPER | SPLIT VIEW | REPORT | EXPORT

STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5 | STEP 6 | STEP 7 | STEP 8

3. Problem Analysis & Breakdown

UPLOAD ATTACHMENT

Step 3: Point of Cause Discovery

Quantify and prioritize the Vital Few.

AI INTELLIGENCE BREAKDOWN

PROBLEM BREAKDOWN — ADD FACTOR

OVERALL EQUIPMENT EFFECTIVENESS (OEE)

OEE

59 %

FALLING | OUTLIER

MEAN TIME BETWEEN FAILURES (MTBF)

MTBF

3,2 HOURS

FALLING | OUTLIER

MEAN TIME TO REPAIR (MTTR)

MTTR

1,8 HOURS

RISING | OUTLIER

DOWNTIME FREQUENCY

DowntimeEvents

12 EVENTS/WEEK

RISING | OUTLIER

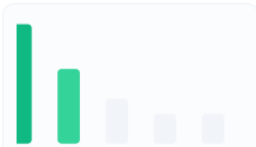
MATERIAL SHORTAGES AT FA-02

MaterialShortages

8 OCCURRENCES/WEE

RISING | OUTLIER

PARETO PRIORITIZATION



RANK / CATEGORY	FREQUENCY
1 Electrical Failures	40
2 Hydraulic System Leaks	25
3 Software Glitches	15
4 Mechanical Wear	10
5 Sensor Malfunctions	10

VITAL FEW CONCLUSION

CNC-07 is experiencing excessive unplanned downtime due to a combination of electrical, hydraulic, software, and mechanical issues, leading to OEE degradation and material flow disruptions affecting downstream assembly FA-02. Addressing these high-frequency failure modes is crucial for operational improvement.

UNVERIFY STEP

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GH-M1 CNC-07 Unplanned Downtime Reduction

STEPPER | SPLIT VIEW | REPORT

EXPORT

STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5 | STEP 6 | STEP 7 | STEP 8

4. Target Setting

UPLOAD ATTACHMENT

Step 4: Target Setting

AI TARGET OPTIMIZER

BASELINE

6,2

HOURS/WEEK

67.7% Reduction

TARGET STATE

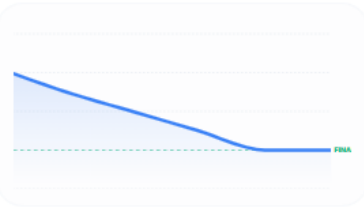
2

HOURS/WEEK

GOAL STATEMENT

Reduce unplanned downtime on CNC-07 in Gearbox Housing Machining Line GH-M1 to improve material flow to downstream assembly FA-02, decrease operational

EXECUTION PATHWAY



PHASE GATES

NEW PHASE

COMPLETE DETAILED FAILUR

15/07/2024

5

HOURS/WEEK

IMPLEMENT TOP 3 COUNTER

15/08/2024

4

HOURS/WEEK

VERIFY

3

SUCCESS CHECKPOINTS

Sustai n

Achiev e

Reduc e

Decre ase

UNVERIFY STEP

Previous

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Next Step

A3

GH-M1 CNC-07 Unplanned Downtime Reduction

STEPPER | SPLIT VIEW | REPORT | EXPORT

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5. Root Cause Analysis

UPLOAD ATTACHMENT

5-WHYS | **FISHBONE**

AI PRIORITIZE VITAL CAUSES

Ishikawa (Fishbone) Analysis

Structured brainstorming to uncover systematic Point of Causes (PoC).

AI CATEGORIZE CAUSES

Man (Personnel)
HUMAN FACTORS

- Inadequate training on CNC-07 specific maintenance procedures
- Insufficient staffing levels during critical shifts
- Lack of adherence to preventive maintenance schedules
- Delayed reporting of minor machine anomalies

Scope: Human factors, skills, training, behavior

Machine
EQUIPMENT

- Electrical component failures (e.g., sensors, relays)
- Hydraulic system leaks and pump malfunctions
- CNC control software glitches and errors
- Mechanical wear and tear on moving parts (e.g., bearings, spindles)
- Inadequate cooling system performance leading to overheating

Scope: Equipment, tools, software, hardware

Material
RAW MATERIALS

- Inconsistent raw material quality affecting cutting tool wear
- Contamination of hydraulic fluid with debris
- Substandard replacement parts used during repairs

Scope: Raw materials, components, consumables

Method (Process)
WORK INSTRUCTIONS

- Lack of standardized troubleshooting procedures
- Ineffective preventive maintenance program
- Insufficient data logging and analysis of machine performance
- Absence of real-time monitoring system for critical parameters

Scope: Work instructions, SOPs, rules

Measurement
DATA

- Inaccurate sensors providing unreliable feedback
- Insufficient calibration of measuring instruments
- Lack of comprehensive data on downtime events
- Inadequate monitoring of hydraulic fluid pressure and temperature

Scope: Data, sensors, inspection, standards

Mother Nature
ENVIRONMENT

- Ambient temperature fluctuations affecting hydraulic fluid viscosity
- Humidity affecting electrical components

Scope: Environment, workspace, humidity, noise

Actionable Findings

Review your brainstormed items and use the target icon to select 1-2 key causes. These will be automatically carried forward to the countermeasure planning phase.

EFFECT / DEVIATION STATEMENT

SYNC CONTEXT | AI SUGGEST STATEMENT

```
### Verified Root Causes
- Lack of adherence to preventive maintenance schedules
- Ineffective preventive maintenance program
- Insufficient data logging and analysis of machine performance
```

UNVERIFY STEP

Previous | Next Step

A3

GH-M1 CNC-07 Unplanned Downtime Reduction

STEPPER | SPLIT VIEW | REPORT

EXPORT

STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5 | **STEP 6** | STEP 7 | STEP 8

6. Countermeasures & Plan

UPLOAD ATTACHMENT

Strategy Execution Board

STEP 6: COUNTERMEASURES & MILESTONES

AI SUGGEST PLAN | + ADD ACTION

HIGH IMPACT · NOT STARTED Implement a computerized maintenance management system (CMMS) to automate PM scheduling and track adherence. Integrate CNC-07 Maintenance... · 31/12/2024 TECHNI · NOT STARTED	HIGH IMPACT · NOT STARTED Conduct a comprehensive review and revision of the existing preventive maintenance program for CNC-07. This includes updating PM Reliability En... · 30/11/2024 PROCES · NOT STARTED	HIGH IMPACT · NOT STARTED Install advanced sensors and data logging equipment on CNC-07 to monitor key performance indicators (KPIs) such as vibration, temperature, Automation E... · 31/01/2025 TECHNI · NOT STARTED
MEDIUM IMPACT · NOT STARTED Establish a strict quality control process for incoming replacement parts, including verification of manufacturer certifications, material Quality Assu... · 31/10/2024 PROCES · NOT STARTED	MEDIUM IMPACT · NOT STARTED Provide comprehensive training to maintenance technicians on the revised preventive maintenance program, proper troubleshooting techniques, Training Coor... · 28/02/2025 TRAININ · NOT STARTED	MEDIUM IMPACT · NOT STARTED Develop and implement standardized work instructions (SWI) for all maintenance tasks on CNC-07. These SWIs should include detailed step-by-step Maintenance... · 31/12/2024 STANDA · NOT STARTED

Strategy Oversight

0 of 6 actions verified. Efficiency score: 0%.

RECALIBRATE STRATEGY

UNVERIFY STEP

Previous | Next Step

A3

GH-M1 CNC-07 Unplanned Downtime Reduction

STEPPER | SPLIT VIEW | REPORT

EXPORT

STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5 | STEP 6 | STEP 7 | STEP 8

7. Check Results (Monitor)

UPLOAD ATTACHMENT

Step 7: Verification of Results

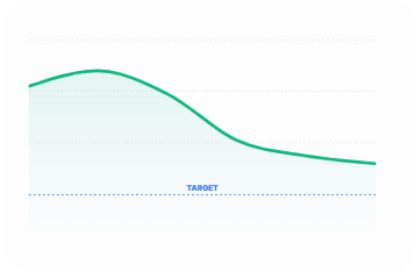
Monitoring sustainment and quantifying final impact.

AI RESULT VERIFICATION

BASELINE	TARGET GOAL	ACTUAL FINAL	VARIANCE GAP
6.2	2	3,2	1.2
HOURS/WEEK	HOURS/WEEK	HOURS/WEEK	HOURS/WEEK

SUSTAINMENT MONITOR
POST-IMPLEMENTATION TREND

LOG DATA



23/09/2	30/09/2	07/10/2	14/10/20	21/10/20
6,8	5,9	4,1	3,5	3,2

IMPACT SUMMARY
BENEFITS (ANNUALIZED / RATE)

FINANCIAL GAIN

$15,000 / year

Estimated annual savings of $15,000 due to reduced

CAPACITY DELTA

Increase in production capac...

Increase in production capacity by 4% due to

RISK REDUCTION

Reduction in potential safet...

Reduction in potential safety incidents related to

OUTCOME SUMMARY

The implementation of countermeasures resulted in a 3.2% reduction in unplanned downtime for CNC-07, exceeding the initial target of 3%. The

UNVERIFY STEP

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GH-M1 CNC-07 Unplanned Downtime Reduction

STEPPER | SPLIT VIEW | REPORT

EXPORT

STEP 1 | STEP 2 | STEP 3 | STEP 4 | STEP 5 | STEP 6 | STEP 7 | STEP 8

8. Standardize & Share

UPLOAD ATTACHMENT

Step 8: Standardize & Share

Codifying success and scaling the solution across the enterprise.

AI SCALING STRATEGY

PROCEDURAL UPDATES
SOP & STANDARD WORK

- **CNC-07 Preventative Maintenance Checklist**
  CREATED · PUBLISHED
- **CMMS Data Entry SOP**
  CREATED · DRAFT
- **Predictive Maintenance Work Instruction**
  CREATED · PENDING

HORIZONTAL SCALING
YOKOTEN & BENCHMARKING

- **GH-M2 CNC Maintenance Team**
  WORKSHOP
- **Central Maintenance Engineering**
  WORKSHOP
- **CNC Maintenance Training Dept.**
  WORKSHOP

SUSTAINMENT LEAD

Maintenance Manager

CORE LESSONS LEARNED

CMMS data accuracy is critical for effective root cause analysis. Proactive predictive maintenance and improved parts quality significantly reduce unplanned downtime. Technician training on new maintenance procedures is essential for successful

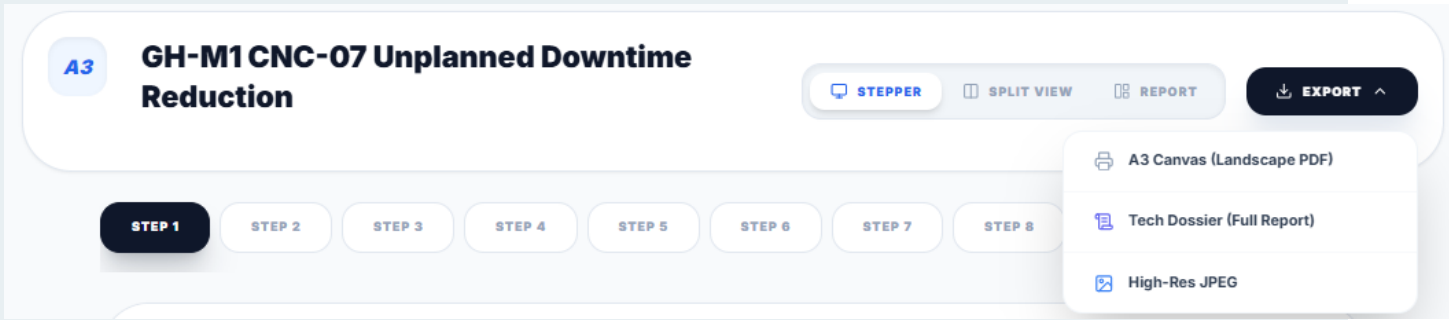
UNVERIFY STEP

Previous

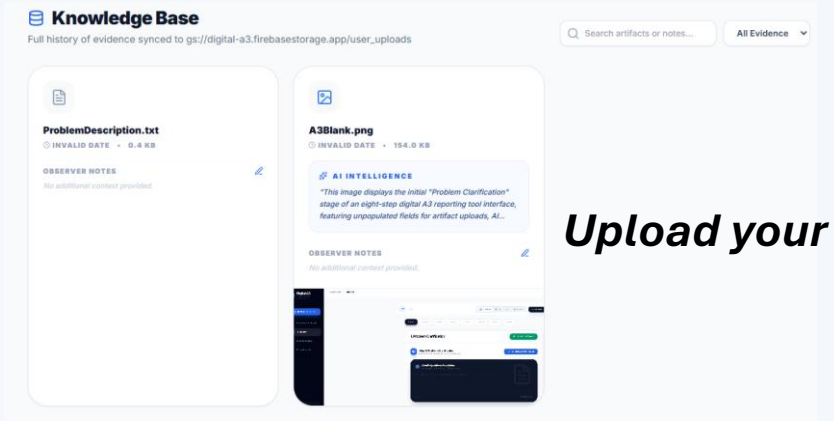
Next Step

OTHER FUNCTIONS

Export reports



Upload your files



Machine Learning with your data