



Assembly Line Operating System

Transform your production line with a scalable digital backbone built to maximize human and machine performance.

The Hidden Complexity of Modern Assembly Lines



Complex Ecosystem

Multiple technologies, machines, and people must operate in harmony.



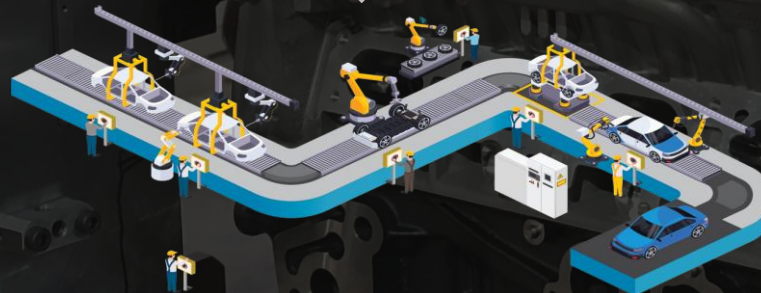
Integration Challenges

Disconnected systems create friction and inefficiencies.



Manual Process Risks

Manual processes lead to hidden costs and risks.



The Consequence: Fragile, Inefficient Operations



Complex systems

stacked on fragile foundations, cause instability.



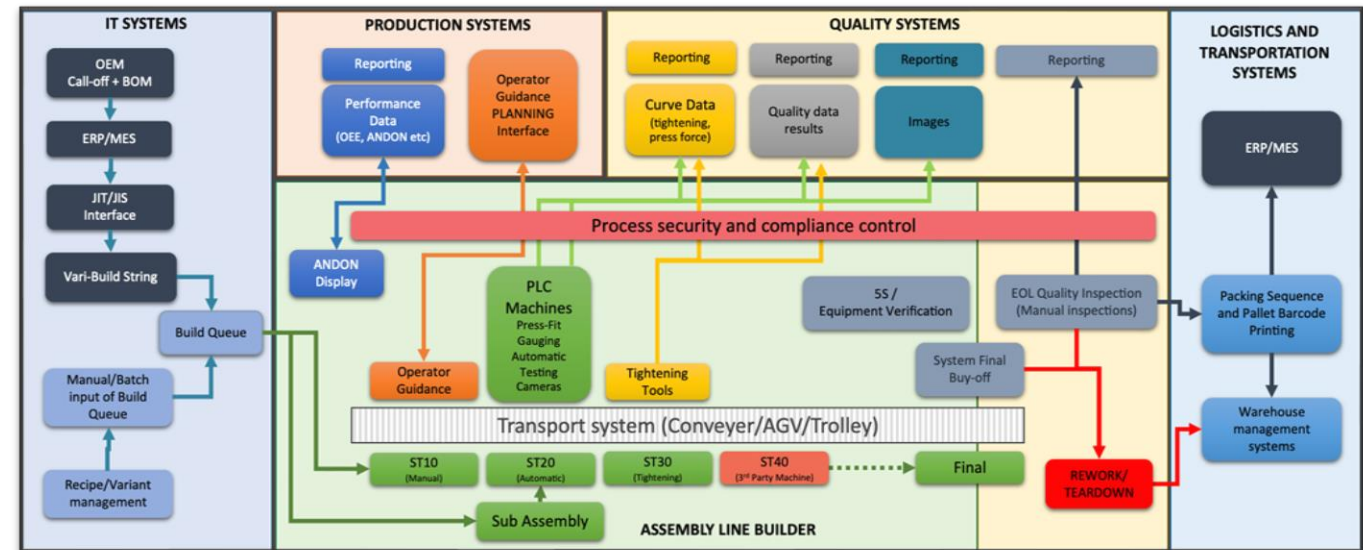
High costs

of initial setup and adaptation lead to diminishing returns over time.



Higher Risks

of operational breakdowns
lower quality and inefficiencies



Complexity: Illustration of stacked systems and their interconnections. Each colour represents a different vendor system or machine required for an assembly line to function.

Why Other Solutions Fall Short

Superficial Integration:

Generic protocols and middleware limit visibility.

Inflexibility:

Difficult to adapt to changing production needs.

Lack of Contextual Data:

Critical real-time and granular insights are missing.

Uncontrolled manual operations:

Manual intervention causes errors and downtime, while unplanned rework increases the risk of NOK deliveries.

ODIN Workstation:

Solid Foundation + Deep Integration

Connecting People, Process, Machine and AI

Built for Stability:

Unified data backbone connects people, processes, and machines.

Resilient Architecture:

Designed to adapt, scale, and evolve with production needs.

Native Machine Integration:

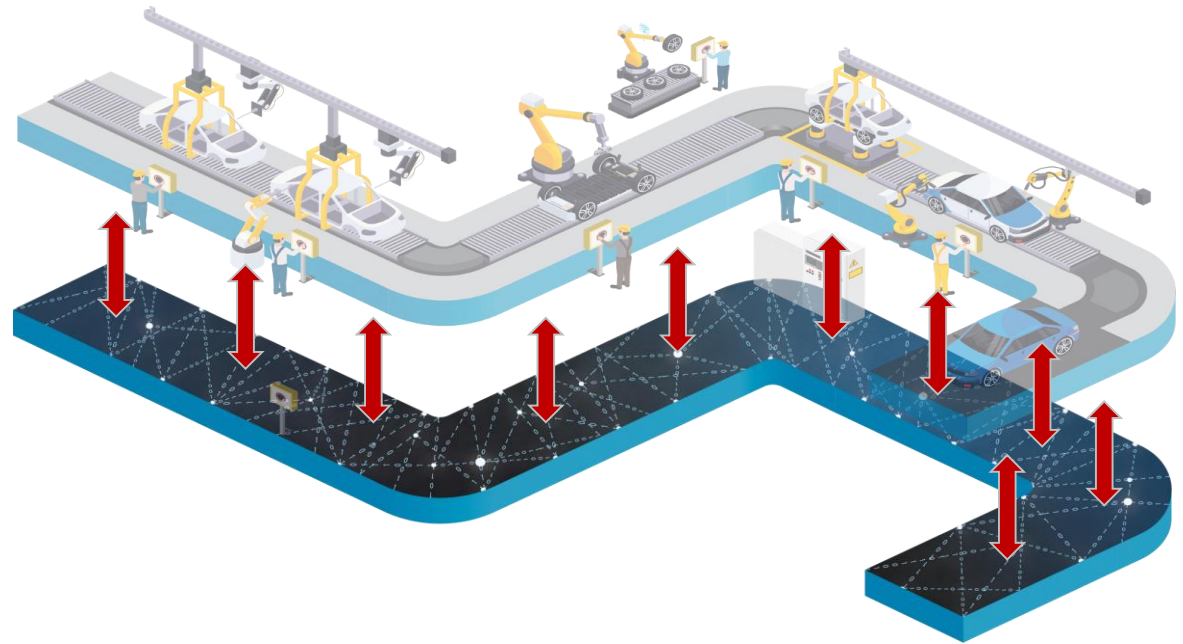
Direct PLC and hardware communication — no middleware.

Data First Design:

Real-time, contextual granular data capture for unmatched operational insights.

Future-Ready:

Platform designed for continuous AI-driven improvement



ODIN Workstation:

Focussed on customer empowerment

From planning to validation, the product owner is in control

Planning

Data on what and how to build the product

BOM, BOP, Work Instructions, Machine Settings

Execute

Get the people and machines work to produce the product

Integrate with production hardware (OT), Poke Yoke, Rework management, 5S,

Validate

Data Analytics to drive optimization opportunities and manage risk

Quality Assurance, Data analytics, Predict, prescribe improvements

Planning

Data on what and how to build the product

BOM, BOP, Work Instructions, Machine Settings

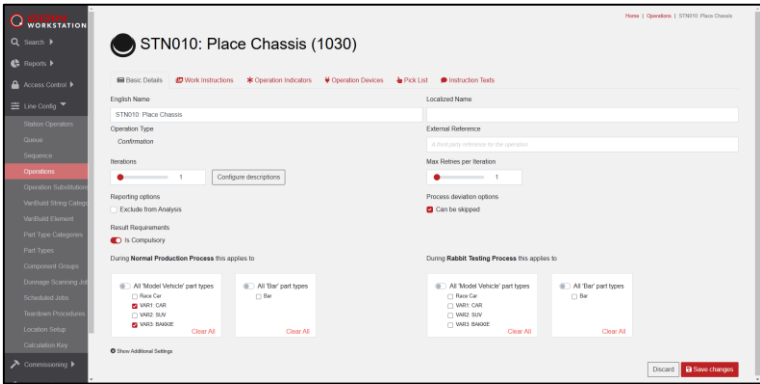
Data on what and how to build the product

BOM, BOP, Work Instructions, Machine Settings

1 From BOM / PDM

[illegible]

2

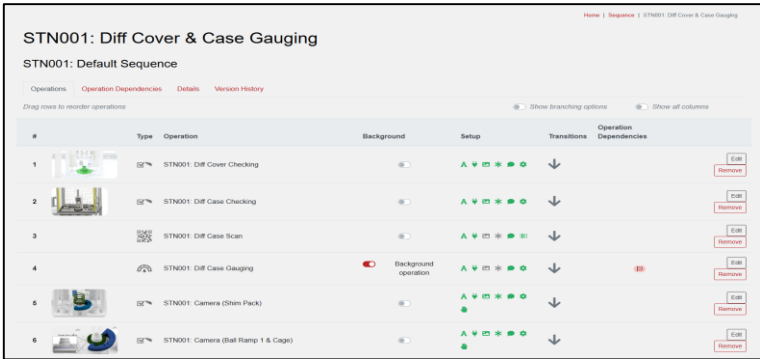


No-code Operations

Create operations, including rules for variants, retries and validation.

Process engineers control the rules, text and images

3

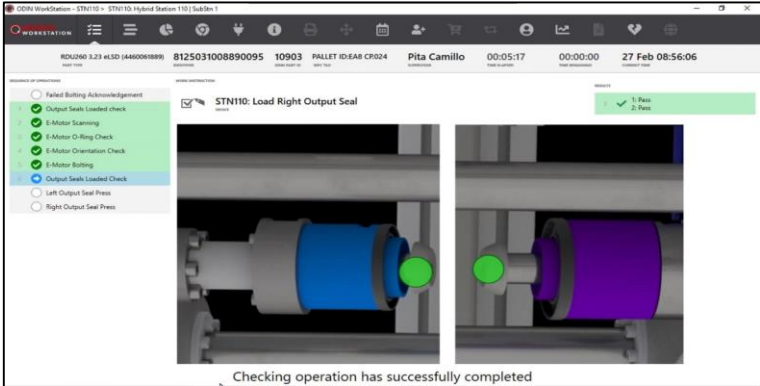


No-code Sequences

Create the sequence of operations and how they are linked

Process engineers control
flow of the part

4



Automatic worker guidance

Worker guidance screens are automatically created based on the input from the process engineers.

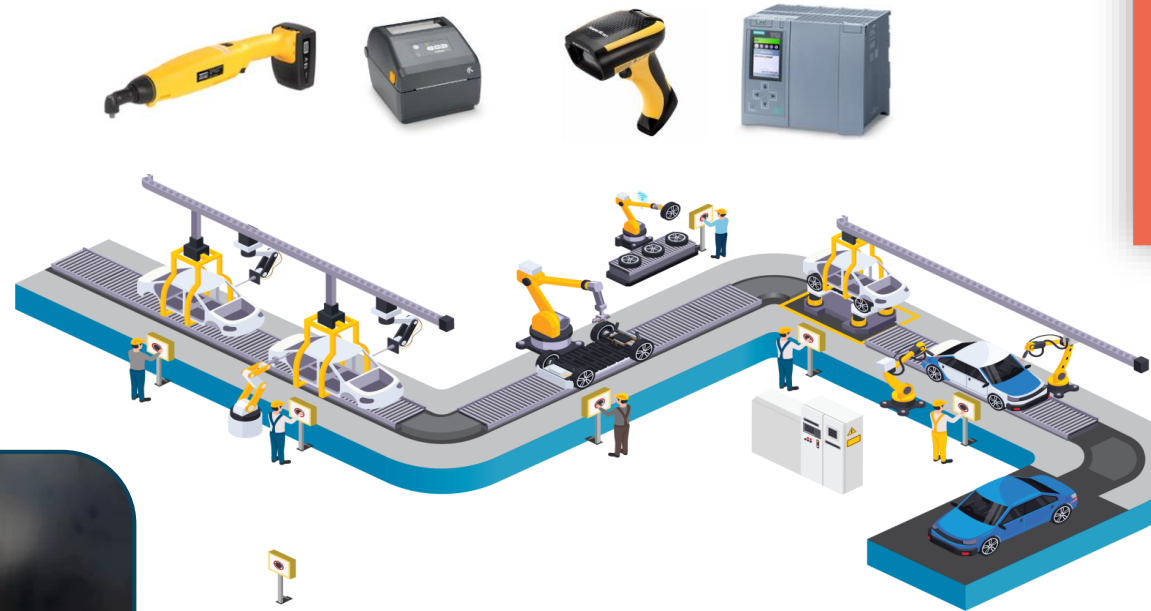
Execute

Get the people and machines work to produce the product

Integrate with production hardware (OT), Poke Yoke, Rework management, 5S,

Operational Control

Workstation controls devices, pulling operation parameters from the database.

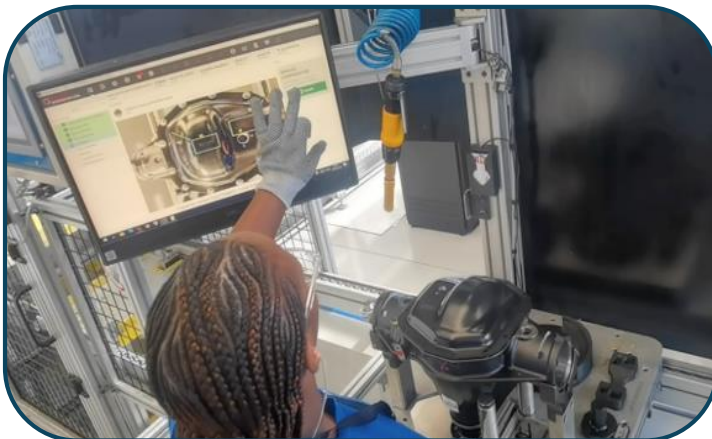


AI Poke Yokes

AI Vision based poke yokes can be parameterized and controlled



Worker Guidance



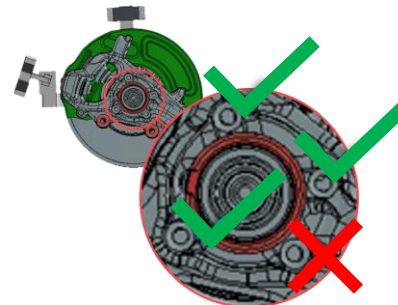
Out of Sequence Tasks

Manage acyclic tasks, such as station cleaning or tool verification based on hours or cycles



Granular Rework

Each operation is tracked, allowing precise rework strategies



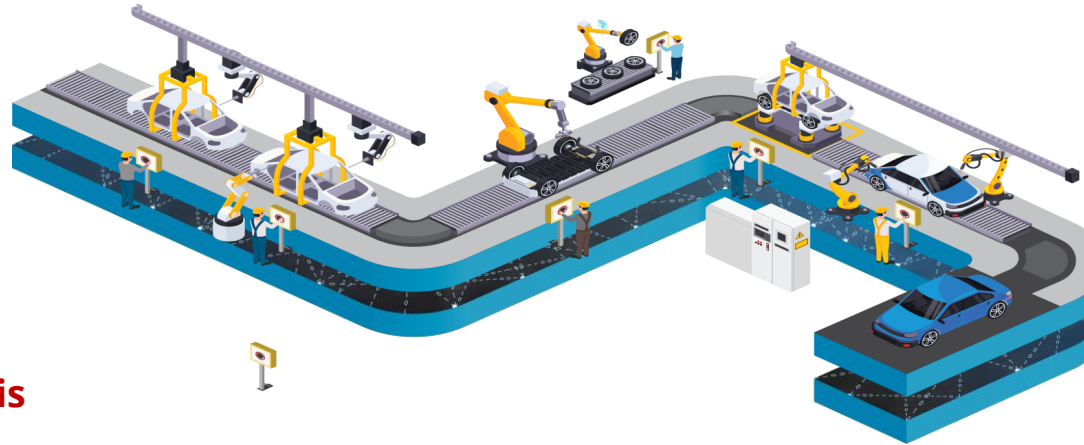
Validate

Data Analytics to drive optimization opportunities and manage risk

Quality Assurance, Data analytics, Predict, prescribe improvements

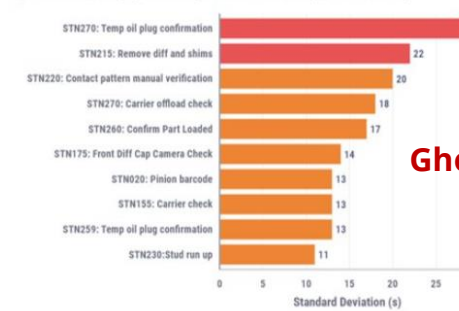
Real Time Production Analysis

Detailed production data for each operation in each station by each operator. Complex analysis allows for real time Cpk studies



Top 10: Least Stable Processes

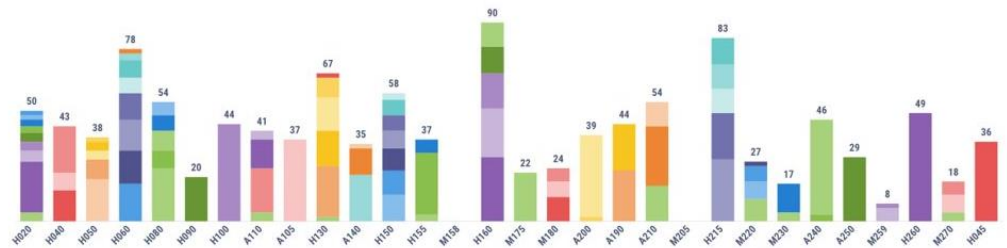
● Unstable Process, High Variability ● Unstable Process, Medium Variability



Ghost Bottlenecks

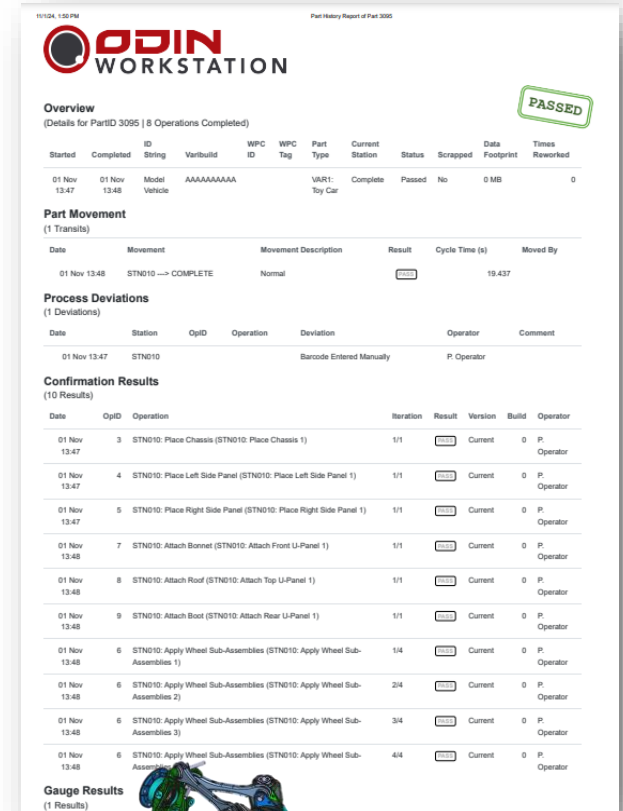
Station data per operation

- STN020: Carrier sticker print | Agg Avg (s)
- STN020: Component check | Agg Avg (s)
- STN020: Gear set material n... | Agg Avg (s)
- STN020: Ring gear deviation... | Agg Avg (s)
- STN020: Gear set serial num... | Agg Avg (s)
- STN020: Pinion head deviati... | Agg Avg (s)
- Blow carrier in all bearing... | Agg Avg (s)
- STN020: Pinion barcode | Agg Avg (s)
- STN040: Hole to hole measur... | Agg Avg (s)
- STN040: Carrier barcode | Agg Avg (s)
- STN040: Carrier measurement... | Agg Avg (s)
- STN050: Head bearing check | Agg Avg (s)
- STN050: Torque center piece... | Agg Avg (s)

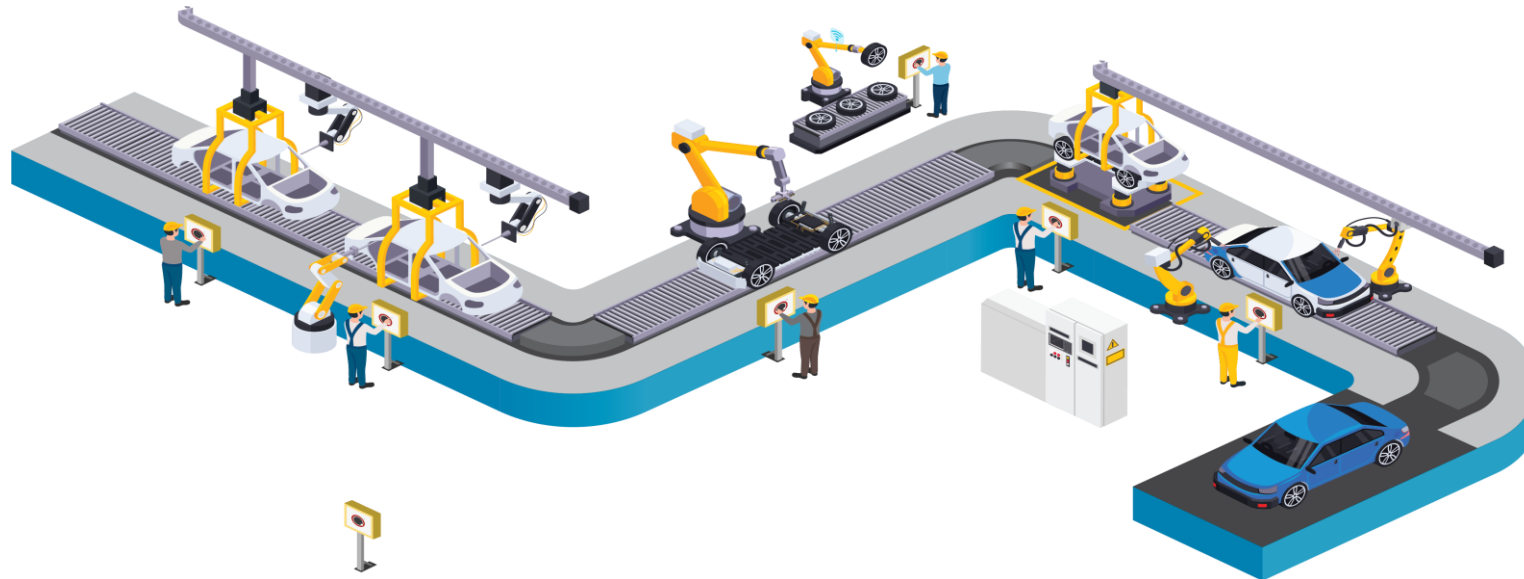
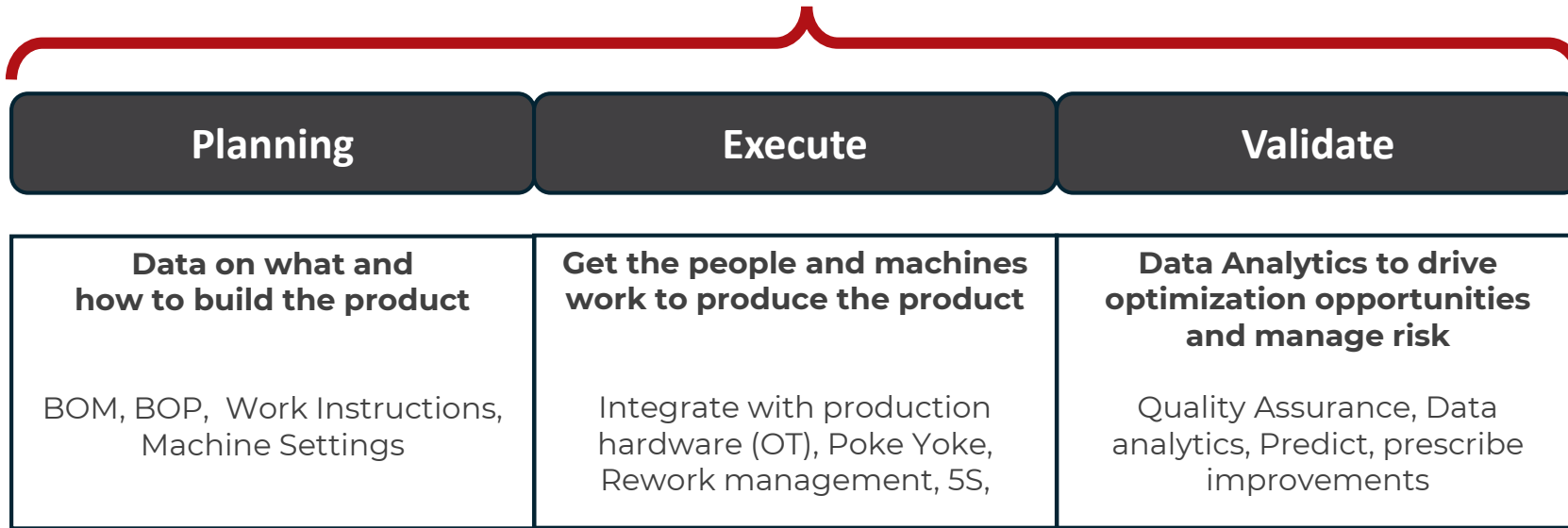


Part History Report

Full, granular report of all process steps, data and additional sources (images, pdfs, etc)



ODIN Workstation - Assembly Line Operating System



A New Standard for the Assembly Line

From Operator to CEO – A System that Works for Everyone

Operators

Clear, step-by-step instructions minimise errors

Engineers

No-code configuration speeds up process adjustments

Quality Managers

Automated validation ensures compliance

IT & Integrators

Open connectivity supports seamless integration

Management

Data-driven decisions enhance overall productivity

Key Benefits for Manufacturers

TENNECO

80%

Improvement in Quality output

Smart Worker Guidance



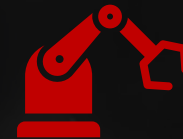
Animated Guidance

Animated, intuitive instructions minimise operator errors. Adapts to unique part in station



Faster Training

Reduce ramp-up times with at-station learning.



Connected to Hardware

Integrated hardware ensures process compliance automatically.

AI Virtual Devices

Virtual Hardware

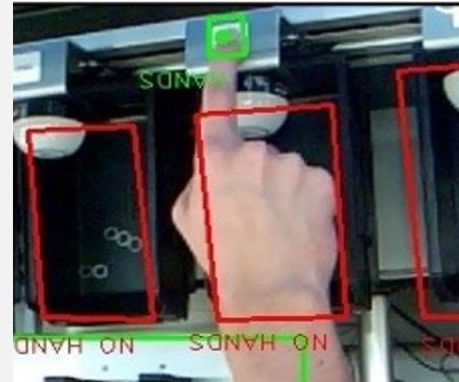
Replace physical sensors, buttons, and clamps with AI vision-driven virtual devices.

Flexibility

Increase flexibility while reducing hardware costs.

Quality Enablement

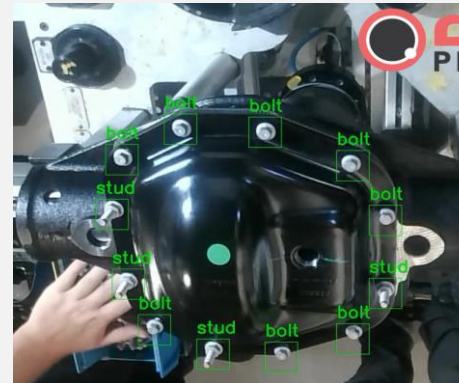
Improve process control and operational quality.



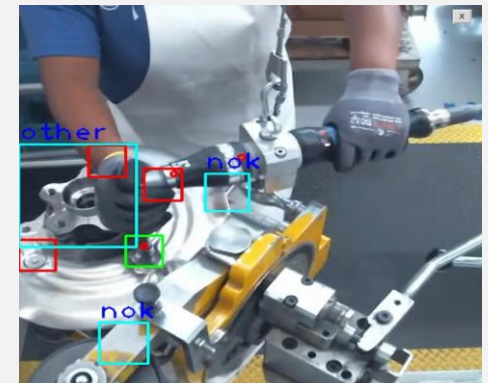
Virtual Push Button



Virtual Pick2Light



Ensuring correct part fitment(bolt vs stud)



Ensuring the correct position of a device (bolting tool)

Quality Assurance & Full Traceability

Full Genealogy

Full genealogy and traceability at the part level.

All process data is Captured

Capture all process steps and deviations automatically

Data driven Quality

Increase first-time-through quality and reduce defects.

11/10/24, 1:50 PM Part History Report of Part 3095



PASSED

Overview

(Details for PartID 3095 | 8 Operations Completed)

Started	Completed	ID String	Varibuild	WPC ID	WPC Tag	Part Type	Current Station	Status	Scrapped	Data Footprint	Times Reworked
01 Nov 13:47	01 Nov 13:48	Model Vehicle	AAAAAAAAAA			VAR1: Toy Car	Complete	Passed	No	0 MB	0

Part Movement

(1 Transits)

Date	Movement	Movement Description	Result	Cycle Time (s)	Moved By
01 Nov 13:48	STN010 → COMPLETE	Normal	PASSED	19.437	

Process Deviations

(1 Deviations)

Date	Station	OpID	Operation	Deviation	Operator	Comment
01 Nov 13:47	STN010			Barcode Entered Manually	P. Operator	

Confirmation Results

(10 Results)

Date	OpID	Operation	Iteration	Result	Version	Build	Operator
01 Nov 13:47	3	STN010: Place Chassis (STN010: Place Chassis 1)	1/1	PASSED	Current	0	P. Operator
01 Nov 13:47	4	STN010: Place Left Side Panel (STN010: Place Left Side Panel 1)	1/1	PASSED	Current	0	P. Operator
01 Nov 13:47	5	STN010: Place Right Side Panel (STN010: Place Right Side Panel 1)	1/1	PASSED	Current	0	P. Operator
01 Nov 13:48	7	STN010: Attach Bonnet (STN010: Attach Front U-Panel 1)	1/1	PASSED	Current	0	P. Operator
01 Nov 13:48	8	STN010: Attach Roof (STN010: Attach Top U-Panel 1)	1/1	PASSED	Current	0	P. Operator
01 Nov 13:48	9	STN010: Attach Boot (STN010: Attach Rear U-Panel 1)	1/1	PASSED	Current	0	P. Operator
01 Nov 13:48	6	STN010: Apply Wheel Sub-Assemblies (STN010: Apply Wheel Sub-Assemblies 1)	1/4	PASSED	Current	0	P. Operator
01 Nov 13:48	6	STN010: Apply Wheel Sub-Assemblies (STN010: Apply Wheel Sub-Assemblies 2)	2/4	PASSED	Current	0	P. Operator
01 Nov 13:48	6	STN010: Apply Wheel Sub-Assemblies (STN010: Apply Wheel Sub-Assemblies 3)	3/4	PASSED	Current	0	P. Operator
01 Nov 13:48	6	STN010: Apply Wheel Sub-Assemblies (STN010: Apply Wheel Sub-Assemblies 4)	4/4	PASSED	Current	0	P. Operator

Gauge Results

(1 Results)

Data-Driven Decision Making



Real-time

dashboards reveal
production insights
instantly

Proactive

problem-solving
replaces reactive
firefighting.

Smarter, faster

lower-risk decisions
every day.

Granular, contextual data

captured directly from
connected devices and PLCs

Global Validation and Results



Why ODIN Workstation?

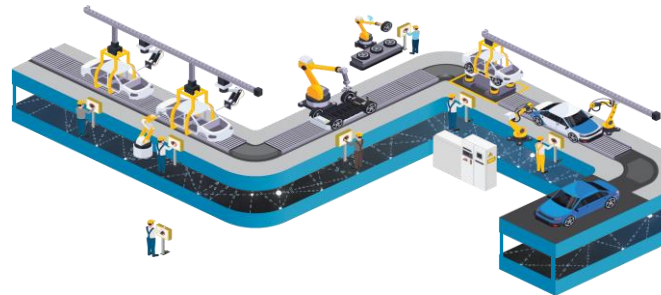


Built by engineers of engineers.



Built on 30 years of experience of delivering 3000+ assembly systems.

Digital First



Modular, flexible, and ready for future AI enhancements.

Global reach.



US\$ 6.20Bn
Turnover

90+
Countries

150k+
Employees

1100+
Global Customers

Global implementation & support via Tech Mahindra partnership.

Let's Discuss Your Line



📞 Contact: Yanesh Naidoo | Strategy – ODIN Manufacturing

📱 Mobile: +27 (0)82 451 3803

✉ Email: yanesh@jendamark.co.za

🌐 Website: www.odinworkstation.io