

VectorMind AI for Manufacturing

**From shop-floor to ledger:
accurate production, faster
exception handling and
auditable decisions.**

CohesionX's VectorMind applies secure, auditable Gen-AI to operator records, QC certificates, invoices and telemetry so manufacturers reduce downtime, protect margin and keep customers and auditors satisfied.



Manufacturers operate at speed across complex supply chains, multi-site operations and strict quality and safety regimes. Fragmented production logs, paper-based quality certificates, siloed supplier invoices and disjointed maintenance records slow reconciliation, obscure cause-and-effect and create revenue leakage. VectorMind for Manufacturing recognises these pain points and embeds multimodal ingestion, provenance linking, rules-based orchestration and explainable reasoning so teams resolve exceptions faster, enforce quality acceptance consistently and post accurate charges to ERP with full audit trails.

Production Reporting, Quality Acceptance & Traceability

Inconsistent QC processes and dislocated test documentation increase scrap, rework, and customer rejections; VectorMind automates QC capture, links results to production batches and enforces acceptance gates so only compliant product ships.



How it works

- **Ingest:** Iris captures QC certificates, lab test results, production logs, PLC/SCADA snapshots, operator checklists and photos from handheld scanners, lab systems and cameras.
- **Extract & Normalise:** Iris extracts batch IDs, test values, instrument metadata and measurement units; normalises units and thresholds.
- **Build Provenance:** Atlas links batch production steps to laboratory results, inspection photos and operator sign-offs, constructing a time-stamped evidentiary graph for each batch.
- **Validate & Enforce:** Neuroflow applies contractual and internal quality rules (spec thresholds, sampling plans, acceptance tolerances), gates shipments where non-conformance is detected and routes exceptions to QA with prefilled dossiers.
- **Remediate & Record:** Business GPT summarises probable causes, recommends remediation (rework, blend, reject) with cited evidence and Neuroflow schedules corrective work orders and records approvals.
- **Audit & Recall Support:** Synaptic Search and Atlas provide rapid recall-pack generation and auditor-ready evidence packs per batch.

Gains

- **Fewer customer rejections** and reduced scrap through early detection and enforced acceptance gates.
- **Faster batch release** or hold decisions supported by source-linked evidence.
- **Consistent QC interpretation** across sites and shifts via standardised rules and precedent retrieval.
- **Shorter recall cycles** and defensible evidence for audits and customer queries.
- **Lower rework cost** and improved on-time delivery performance.



Supplier Invoicing, Cost Allocation & ERP Posting

Misallocated supplier charges and manual invoice reconciliation erode margin and slow finance close; VectorMind ensures supplier and utility costs are allocated accurately to production batches, cost centres and customer orders, then posted to ERP.

How it works:

Iris ingests supplier invoices, utility statements, carrier charges and machine runtime logs, extracting line items, consumption metrics and billing metadata. Atlas links each bill to purchase orders, production batches or cost centres and Neuroflow applies allocation formulas (per batch, per run hour, per kg), reconciles against production and weighbridge records, writes validated charge lines to the ERP and creates customer/supplier invoices or internal chargebacks; exceptions are opened with Atlas-assembled evidence and Business GPT drafts dispute communications.



Accurate cost allocation | Faster finance close | Reduced supplier disputes | Improved cost visibility

More Manufacturing Use Cases



Predictive Maintenance & Work-order Automation

Reactive maintenance leads to unplanned downtime and high emergency costs because inspection reports, vibration logs, and service histories are siloed. Iris ingests inspection records, sensor telemetry & vendor reports; Atlas correlates asset histories & OEM manuals; Business GPT prioritises maintenance actions & Neuroflow schedules work orders with SLA tracking and parts provisioning.



Order-to-Cash & Dispatch Reconciliation

Discrepancies between dispatch records, carrier documents & customer proof of delivery delay invoicing and cash collection. Iris extracts dispatch manifests, PODs & carrier receipts; Atlas links them to sales orders & invoices; Neuroflow reconciles, posts confirmed shipments to ERP and opens exceptions with prefilled dossiers when mismatches occur.



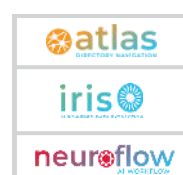
Supplier Onboarding & Quality Assurance (incoming materials)

Manual supplier qualification and inconsistent QA checks for incoming materials create variability in input quality. Knowledge Nodes guide supplier intake and document submission; Iris extracts supplier certificates & test reports; Atlas links supplier profiles & historical performance; Neuroflow enforces acceptance criteria and quarantine workflows where necessary.



Shop-floor Exception Handling & Root-Cause Analysis

Production deviations require time-consuming manual collation of logs, operator notes and QC results to find root cause. Iris gathers production logs, operator entries and QC data; Atlas assembles an evidentiary graph for each deviation; Business GPT proposes likely root causes and Neuroflow triggers corrective workflows and continuous improvement tickets.



Regulatory Reporting, Compliance & Audit Readiness

Complex safety, environmental & product compliance reporting requires rapid evidence assembly across documents, lab tests and telemetry. Atlas builds provenance graphs tying compliance evidence to production and test records; Iris ingests supporting documents. Neuroflow compiles regulator-ready submission packages while Business GPT drafts narratives and explanations.



Commercial Knowledge Assistant & Contract Clause Extraction

Commercial teams spend time hunting for contract clauses, pricing terms & precedent outcomes across files. Iris extracts contract clauses and delivery terms; Synaptic Search and Atlas enable semantic retrieval of precedent clauses; Business GPT summarises commercial impacts & suggested negotiation positions. Neuroflow enforces pricing rules in billing.



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your data, our AI

VectorMind provides an affordable, easy-to-integrate Gen-AI solution, giving your employees access to the magic of all the top global commercial Gen-AI platforms, without exposing IP and sensitive data.



**Get rid of tedious
tasks & human error**



**Automate actions &
set alerts**



**Always ensure factual
AI answers**



**Homegrown
affordable South
African software**

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