ShivAI Supply Chain Solutions

QUALITY · NCR · CAPA INTELLIGENCE

You Know the Defect. But Which Machine Created It?

ShivAI Quality CAPA Engine — The complete quality loop in one system. Capture nonconformances from production, customer complaints, and audit findings into a formal NCR register. Map every defect to the machine that created it. Drive structured root cause analysis with 5-Why and Fishbone (Ishikawa), then close the loop through the 8D CAPA workflow with containment, corrective, and preventive actions — every step audited, every action evidenced.

THE QUALITY PROBLEM

Defects Are Logged. Root Causes Are Not.

Detecting Is Not Solving

Final inspection catches the scratch. But where was it created? Assembly? Machining? Deburring? If you fix the wrong station, the defect keeps coming.

RCA Lives in Meeting Notes

Someone says '5-Why analysis needed.' It happens on a whiteboard. Photos on someone's phone. Actions assigned verbally. No tracking. No closure. Same defect next month.

Pareto Without Process Mapping

You know 'Scratch' is your #1 defect. But across 15 stations, which one is the source? Without defect-to-station mapping, Pareto is just a chart on the wall.

No NCR. No 8D. No Audit Trail.

Defects in Excel. Complaints in Outlook. CAPA actions in a forgotten email thread. When the audit asks for the NCR with the closed 8D and effectiveness check, you scramble for two days reconstructing what should have been logged in real time.

THE SOLUTION

Map. Analyze. Fix. Track. Close.

Upload your process flow, defect log, customer complaints, and production data. ShivAI captures every nonconformance into a formal NCR register, maps each defect to the machine that created it, then drives a full 8D CAPA — 5-Why, Ishikawa fishbone, containment, corrective and preventive actions with owners, due dates, evidence, and effectiveness checks. The complete quality management loop in one system.

THE 5-STEP WORKFLOW

Step 1: Map Your Production Line Tell the system how your shop floor is laid out — the sequence of machines and workstations from first operation to final packing. This is the backbone that everything else connects to.

Step 2: Upload Your Defect Data Bring in your existing quality records — defects, customer complaints, and NCRs flow into a single register. Date, line, product, shift, defect name, quantity, detection stage, detection station. If you're already logging in Excel or a quality register, that data works as-is. The production log feeds automatic KPIs — DPPM, FTY, and complaint rate.

Step 3: Trace Each Defect to Its Source Here's what most quality systems miss: they record where a defect was detected, not where it was created. ShivAI analyzes your detection patterns and suggests the most likely originating station — typically upstream from where the defect was caught. You confirm or adjust. Over time, this builds a precise fingerprint of which machines produce which defects.

Step 4: See the Picture — Machine by Machine Now your quality data is reorganized around the question that matters: "For each machine on my line, what defects is it producing, and how many?" Instead of a list of defects, you get a map of problem sources. You immediately see where to focus your improvement budget.

Step 5: Drive 8D CAPA from RCA to Closure Each priority defect launches a full 8D CAPA. Walk through all eight disciplines — Team, Describe, Containment, Root Cause, Permanent Action, Implement, Prevent, Recognize. The 5-Why drills from symptom to root cause. Fishbone (6M) covers Man, Machine, Method, Material, Measurement, and Environment. Containment, corrective, and preventive actions each carry an owner, due date, evidence, and effectiveness check. Sign-off at each D. The methodology auto and aerospace customers expect — audit-ready every day.

qrt Station-first table

origin_station_id	origin_station_name	sequence_no	defect_name	qty	mapping_basis	confidence_score_s
WS-14	Oil Pump Assembly	14	Oil not flow	202	DEFECT_ORIGIN_MAP	
WS-15	FD Sprocket Fitment	15	FD sprocket run out	194	DEFECT_ORIGIN_MAP	
WS-17	Tappet Oil Filling & Fitment	17	Tappet noise	221	DEFECT_ORIGIN_MAP	
WS-35B	Cam RPM Test Rig	36	Auto DC noise	162	DEFECT_ORIGIN_MAP	
MA-01	CC Loading & Gear Assembly	101	Gear not engage	197	DEFECT_ORIGIN_MAP	
MA-09	E-Start Motor Housing	109	Double gear noise	207	DEFECT_ORIGIN_MAP	
MA-10	Cam Matching	110	Cam noise	445	DEFECT_ORIGIN_MAP	
MA-13	Rotor & Gear Shift Shaft	113	Starting trouble	262	DEFECT_ORIGIN_MAP	
MA-23	Push Rod, Crank Lever & Carburetor Assembly	123	Misfiring	153	DEFECT_ORIGIN_MAP	

Quality Filter Map — station-first defect attribution table with origin confidence scores and Pareto chart

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THE CAPA ENGINE — NCR · 8D · RCA

Not a Brainstorm. A Closed Loop.

NCR Register

Every nonconformance gets a formal NCR number. Source (production, complaint, audit), severity, owner, disposition. Status from Open through Closed. Aging reports flag what's stuck. Each NCR launches a linked 8D investigation — nothing slips through email threads.

8D CAPA Workflow

All eight disciplines pre-structured — Team, Describe, Containment, Root Cause, Permanent Action, Implement, Prevent, Recognize. Pre-seeded fields at each D, evidence uploads, sign-off gates. The methodology auto and aerospace customers expect on every supplier audit.

5-Why + Fishbone (6M)

Pre-seeded 5-Why levels with text and evidence fields. Ishikawa fishbone enforces six categories — Man, Machine, Method, Material, Measurement, Environment. The proven RCA toolkit, embedded in every 8D investigation. No 'miscellaneous' dumping ground; structured thinking that covers every angle.

defect_code	defect_name	origin_station_id	origin_confidence	detection_method	mapped_by	mapped_on	notes
D007	Auto DC noise	WS-35B	0.55	TEST_RIG	SeedData	2026-02-05	RPM + lift pin readings
D001	Cam noise	MA-10	0.75	MANUAL	SeedData	2026-02-05	Manual cam matching + backlash adjustment
D009	Double gear noise	MA-09	0.55	VISUAL	SeedData	2026-02-05	Double gear adjustment / teeth damage
D006	FD sprocket run out	WS-15	0.7	GAUGE	SeedData	2026-02-05	Sprocket fitment + torque
D003	Gear not engage	MA-01	0.65	MANUAL	SeedData	2026-02-05	Gear train placement / teeth issues
D004	Misfiring	MA-23	0.6	VISUAL	SeedData	2026-02-05	Carburetor / wiring / spark plug checks
D008	Oil not flow	WS-14	0.7	VISUAL	SeedData	2026-02-05	Oil pump O-ring/gasket/air lock
D005	Starting trouble	MA-13	0.7	SENSOR	SeedData	2026-02-05	Rotor key missing / electrical
D002	Tappet noise	WS-17	0.6	VISUAL	SeedData	2026-02-05	Hydraulic tappet oil filling / fitment

8D CAPA Case — disciplines D1–D8 with 5-Why drill-down, Fishbone (6M), and containment, corrective, and preventive actions with evidence and effectiveness check

DEFECT ORIGIN INTELLIGENCE

The Machine That Created the Defect vs. The Machine That Found It

Most quality systems track WHERE a defect was detected. That's useless for fixing the process — you need to know WHERE it was created. ShivAI's origin mapping engine uses detection stage, station sequence, and configurable upstream windows to suggest the most likely origin station. You confirm, and the system attributes defect quantities with confidence scores. Over time, your Quality Filter Map becomes a precise machine-defect fingerprint for your entire production line.

Smart Station Suggestion

Detected In-Process? Origin = same station. Detected at Final Inspection? System suggests upstream stations within a window (default 3 stations back in sequence). No detection station? Shows all stations for manual mapping. Each suggestion includes the reasoning.

Pareto + Process = Focus

Pareto tells you WHICH defects matter (top 15 by quantity, cumulative %). The QFM table tells you WHERE they come from. Together: 'Scratch is 35% of all defects and 80% originate at CNC Lathe Station 3.' Now you know exactly where to invest in process improvement.

EXCEL INPUT — YOUR EXISTING QUALITY DATA

PROCESS_STEPS (Required)

Line ID, Station ID, Station Name, Sequence No, Station Type, Work Area. Your production line map.

DEFECT_LOG · NCR_LOG · COMPLAINTS

Date, line, product, shift, defect name, qty, detection stage and station. Plus the NCR log and customer complaints — all flowing into one register.

ORIGIN_MAP · PRODUCTION_LOG

Defect-to-origin station mapping with confidence scores, built progressively. The production log drives auto-calculated KPIs — DPPM, FTY, and complaint rate.

THE BUSINESS CASE

60%	40%	100%	3x
Faster root cause identification	Reduction in repeat defects	CAPA audit trail coverage	Faster customer audit prep

WHO IT'S FOR

Quality Managers

NCR register, defect mapping, 8D CAPA, complaints, KPIs. The full quality toolkit.

Production Heads

Know which stations create which defects. Focus improvement spend.

Auto/Aero Suppliers

IATF 16949 / AS9100 NCR and 8D CAPA. Customer audit readiness on demand.

Process Engineers

Fishbone + 5-Why + action tracking. Structured problem solving.

Stop Detecting Defects. Start Eliminating Them.

Start your 30-day Pilot (₹4,999) | contact@shivaiscsolutions.com | www.shivaiscsolutions.com