OCTAVE

eBook

The automotive supplier's continuous compliance playbook

Staying IATF 16949 ready between audits

Executive summary

IATF 16949 certification tells you your quality system worked on audit day — not whether it's working between visits when engineering changes and supplier swaps accumulate

Under production pressure, manual documentation chains break, and with IATF Rules 6th Edition revising the formula for calculating required audit days, auditors now have more time on site to find the gaps

A connected, closed-loop QMS eliminates manual handoffs across FMEA, Control Plans and CAPA — so compliance holds continuously, not just on audit day

Introduction

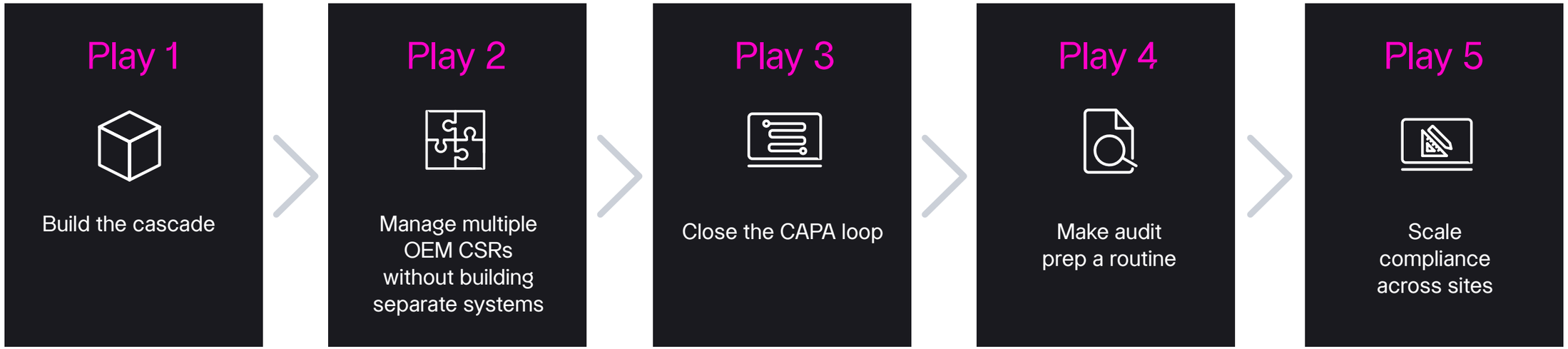
IATF 16949 certification tells you your quality system was working on the day of the audit. It says nothing about whether it's working today.

Between surveillance visits, you make engineering changes and swap suppliers. All of this happens while work instructions fall out of sync with the processes they're supposed to govern.

Every one of those updates requires someone to manually carry the change through the Process Flow Diagram, PFMEA, Control Plan to Work Instruction. When you're under production pressure, these changes don't happen consistently, and gaps accumulate. The issues found in an audit have little to do with your team and more to do with a system that was never designed to maintain accuracy. And the COPQ footprint reflects it.

However, when you automate this process and create a closed-loop that continuously feeds back into your quality system, you can reduce these costs, generate revenue and maintain compliance for multiple standards.

When Cooper Tire implemented a connected quality management system (QMS), they reduced audit administration by 80%, and that figure represents more than time saved. It reflects a quality system that no longer generates findings from documentation gaps, and a team no longer rebuilding compliance under deadline pressure. The plays in this playbook explain how they got there, and how you can build toward the same result in your organization — one that holds up under production pressure.



01

PLAY 1

Build the cascade

Many documentation gaps happen not because engineers forget to update documents, but because of the manual processes involved in the process. The documents were never linked in the first place. When a Process Flow Diagram, PFMEA, Control Plan and Work Instruction exist as separate files — owned by different people, stored in different systems — every change requires someone to manually carry the update through the chain. That's a process that depends on human memory operating perfectly under production pressure.

Three months later, an auditor compares the PFMEA to the Control Plan. They don't match. That's a finding.

Play 1 is about building the cascade before you need it. When these documents are connected and a change to the PFMEA (which should itself track back to the Process Flow Diagram) automatically flags the associated Control Plan steps for review, which triggers a Work Instruction revision, which generates a retraining requirement, and so on, the chain doesn't break because someone forgot or there were two versions of the same document. It holds because the system is designed to hold it.

Key actions

- Map the cascade for your highest-risk programs first to identify where the chain breaks today
- Identify the handoff points where changes most commonly fail to propagate; these typically occur between PFMEA and Control Plan, and between Control Plan and Work Instruction
- Establish a change impact assessment as a required step in your engineering change workflow; before any change is approved, document the cascade impact
- Set ownership for each document in the chain; cascade failures often happen not because nobody owns the documents, but because different people own adjacent documents and don't communicate
- Build the FMEA-to-Control Plan linkage as explicit, traceable connections, not just a convention that quality engineers maintain by habit

20+ sites. One quality system.

Materion replaced a mix of Lotus Notes systems, spreadsheets and no systems at all with a single connected QMS across every global manufacturing site

02

PLAY 2

Manage multiple OEM CSRs without building separate systems

Ford Q1. GM BIQS. Stellantis QRS. Each OEM publishes Customer-Specific Requirements that sit on top of IATF 16949, and each has its own documentation expectations, audit checklist language and scorecard criteria. For a Tier 1 supplier with multiple OEM relationships, managing CSR compliance can feel like running three separate quality systems simultaneously, each with different document sets, different update cycles and triple the audit exposure.

Most suppliers solve this problem by building separate compliance infrastructure for each customer. A Ford Q1 binder. A GM BIQS documentation set. Stellantis-specific procedures. The problem with this approach is that it multiplies the maintenance burden and creates inconsistency between what your core quality system says and what each customer-facing documentation set says. When those diverge, which they usually do under production pressure, compliance gaps form that may not surface until a surveillance audit finds it.

Play 2 is about building one quality process that satisfies multiple CSR sets, rather than maintaining separate systems for each customer. The key is identifying what's truly customer-specific — the documentation format, the specific checklist language, the scorecard metrics — versus what's universal: the underlying process discipline. Build the discipline once. Map it to each customer's requirements as a presentation layer.

Key actions

- Create a CSR matrix that maps each OEM's specific requirements to your core quality process; understand where requirements overlap and where there are genuine differences
- Identify which CSR requirements affect documentation format versus underlying process; format differences can often be handled through templates without duplicating process infrastructure
- Build a CSR update workflow; when Ford, GM or Stellantis updates their requirements, who reviews the update, assesses impact on your processes, and implements the change?
- For each OEM relationship, assign a CSR owner responsible for maintaining awareness of requirement changes and ensuring your quality system stays aligned
- Audit your current documentation set for CSR conflicts; look for places where your process says one thing and a customer-specific document says another

4 plants. 3 countries. 1 quality system.

Kay Automotive Graphics manages OEM and third-party audits from a single connected platform with Reliance

03

PLAY 3

Close the CAPA loop

A CAPA that closes without updating the FMEA is a CAPA that didn't finish. Sure, the corrective action was implemented and the problem was solved for now. But the risk control that should have prevented the failure in the first place was never updated to reflect what you learned. Three months later, a similar failure occurs through a slightly different mechanism that the original FMEA didn't cover, because the CAPA finding never made it back into the document.

This is the most common source of repeat findings in automotive quality. Not because quality teams are careless, but because closing a CAPA and updating the FMEA feel like separate activities that belong to different workflows. The CAPA lives in the quality system. The FMEA lives in an Excel file. There's no automated connection between them, so the lesson learned from the corrective action stays in the CAPA record and never propagates to the risk controls where it would prevent the next occurrence.

Play 3 treats CAPA closure as a two-step requirement. (1) The corrective action must be implemented and verified, and (2) the lesson must feed back into the risk controls. The CAPA is not complete until the downstream documents reflect what the investigation revealed. Build that requirement into your CAPA workflow as a mandatory close condition.

Key actions

- Add a 'risk control review' step to your CAPA closure workflow — a required confirmation that the relevant FMEA, Control Plan or Work Instruction has been evaluated and updated where the investigation reveals a gap in controls. The CAPA cannot close until that review is documented
- Review your last 12 months of CAPAs to see how many closed without a corresponding FMEA update
- For repeat findings, require a root cause analysis that includes review of whether the FMEA and Control Plan reflected the risk correctly
- Build traceability between CAPAs and the documents they affect; a quality engineer reviewing an FMEA should be able to see which CAPA findings have informed its current risk rankings
- Establish effectiveness verification as a required CAPA close condition; the fix must hold for a defined period before the CAPA can close, and the FMEA must reflect the updated control

85% reduction in process costs

GM saved nearly 85% of its initial budget on a complex decommissioning process after replacing manual workflows with a connected Reliance process

04

PLAY 4

Make audit prep a routine

If your surveillance audit is three months away and your quality team is in scramble mode, the problem isn't your team. It's that your system was never designed to maintain audit readiness continuously. Audit prep as a periodic event is a structural guarantee of two things:

1. The weeks before an audit are painful

2. The weeks after the audit are when documentation starts drifting again

IATF Rules 6th Edition, effective January 2025, has made this problem more consequential.

With more time on site, Auditors can go deeper in areas of identified risk, and fragmented, inconsistently maintained documentation is exactly the profile that triggers deeper scrutiny. Since the new rules took effect, auditors are spending more time where documentation is inconsistent or hard to trace. The suppliers who prepared a binder but didn't maintain their system between visits are the ones generating the most findings.

Play 4 is about redefining audit readiness as a system state rather than a preparation task. When your documentation cascade is maintained continuously, you should see:

- Changes propagate automatically
- CAPAs close back into risk controls
- CSR requirements continuously tracked

Key actions

- Establish a monthly internal audit cadence focused on cascade integrity; sample five recent engineering changes and trace whether each one propagated correctly through FMEA to your Control Plan and into your Work Instruction
- Build an audit readiness dashboard that tracks documentation currency in real time; track which FMEAs haven't been reviewed since the last engineering change in their program and Which CAPAs are open past their target closure date
- Assign an audit readiness owner who is responsible not for preparing for audits, but for maintaining the system state that makes audit readiness permanent
- Review your most recent external audit findings and trace each one back to the cascade break that produced it (this is your priority list for Play 1 and Play 3 implementation)

80% less time on audit administration

Cooper Tire spent far less time on audits after implementing connected quality management with Reliance

05

PLAY 5

Scale compliance across sites

This is the tough one. Multi-site compliance creates a specific version of the cascade problem. You have to balance the core IATF 16949 requirements that apply everywhere with the OEM customer-specific requirements that apply to every site producing parts for that customer. But each plant has its own processes, its own engineering change velocity and its own relationship with the customer's regional quality team. The challenge is standardizing how all of this works while remaining flexible enough to adjust.

The most common failure mode in multi-site compliance is over-standardization of the wrong things. Suppliers build uniform document templates and push them to every site, but the underlying processes differ. Not only that, but the templates drift from local reality within months.

Play 5 is built around a distinction that experienced quality directors will recognize: harmonized but not uniform. Core process architecture should be consistent across sites. The specific implementation of that architecture can and should reflect local conditions. The standard says how the system must behave. Local plants determine how it behaves in their context. The governance question is which layer you're managing at the corporate level and which you're delegating — and, of course, how you maintain visibility into both.

Key actions

- Define which elements of your quality process must be identical across all sites (cascade structure, CAPA closure requirements and CSR mapping) versus which may vary (specific tooling, line configurations and local approval workflows)
- Establish a site quality lead at each location who is accountable for local implementation of the core process architecture and for flagging deviations that require corporate review
- Build a cross-site visibility layer, including a corporate quality dashboard that shows documentation currency, open CAPAs and audit readiness status at each site to surface systemic issues before they become multi-site findings
- Create a process for site-initiated change requests; e.g. when a local plant needs to deviate from the standard process architecture, there should be a defined path for requesting, reviewing and documenting that deviation

3,700 employees. 60+ countries. One QMS.

Materion standardized quality processes across all global sites using Reliance — replacing disconnected systems with a single source of truth that scales without customization

A final note on

Automotive suppliers today face compounding compliance pressure. Fragmented documentation, multiple OEM requirements and accelerating engineering change velocity create gaps that widen between audits. The status quo, built on disconnected spreadsheets and manual handoffs, is no longer sufficient to contain them.

Suppliers who build a connected, closed-loop quality system see fewer audit findings, lower COPQ and faster response to OEM requirements at scale. The five plays in this playbook are the path from reactive compliance to a system that continuously maintains its own readiness.

If you'd like to learn more, schedule time to talk about how you can connect all of your systems together to maintain compliance, increase revenue and reduce costs.

Schedule time

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.