



SOLUTION SHEET

International Automotive Task Force (IATF) 16949

Compliance checklist for maintenance teams

A practical guide for maintenance managers and plant managers at Tier 1 and Tier 2 automotive suppliers

Version 3.0 | IATF 16949 scope



How to use this guide

This guide focuses on the seven IATF 16949 requirements that have the greatest impact on maintenance operations at Tier 1 and Tier 2 automotive suppliers.

Part 1 explains what auditors look for and includes a self-assessment checklist for each requirement.

Part 2 shows how Octave Attune EAM (formerly HxGN EAM) supports each requirement and helps simplify compliance.

Use this checklist four to eight weeks before a surveillance audit to identify and address gaps or use it quarterly to evaluate and strengthen your maintenance program.



Clause coverage summary

Clause	Topic	EAM coverage	Section
7.1.3 / IATF 7.1.3.1	Plant, facility and equipment planning: preventive maintenance	Full	1
7.1.5 / IATF 7.1.5.x	Monitoring and measuring resources: calibration and traceability	Full	2
IATF 8.5.1.5	Total productive maintenance: Overall Equipment Effectiveness (OEE), autonomous maintenance, 8 pillars	Full	3
IATF 8.5.1.6	Tooling management	Full	4
IATF 8.5.1.1	Work order records and failure documentation	Full	5
IATF 8.8 / 7.1.3.1	Equipment failure contingency planning	Full	6
IATF 7.5 / 8.5.6	Document control, electronic records and change management	Full	7

* Full coverage of 8.5.1.5 sub-requirements (a-j) depends on correct configuration at implementation. OEE tracking, autonomous maintenance workflows and maintenance objectives must be configured to satisfy the clause in audit.

What IATF 16949 requires from maintenance

IATF 16949 is widely recognized as a quality management standard, but many of its requirements depend on consistent maintenance practices and documentation. Auditors expect more than proof that maintenance was performed. They expect documented maintenance plans, completed work records, calibration history, failure analysis and corrective actions that are complete, traceable and readily available.

1. Preventive maintenance plans and execution

IATF 16949 Clause reference:
7.1.3 / IATF 7.1.3.1 plant, facility and equipment planning: maintenance system

Why auditors look here:

IATF 16949 requires a documented system for maintaining plant infrastructure and production equipment. Auditors want PM plans for critical assets, evidence that scheduled work is executed on time and a traceable completion record. Deviations, work that was due but skipped or delayed, must be documented with a reason and a rescheduled date.

The most common finding here isn't that preventative maintenance (PM) work isn't being done — it's that the evidence of execution is incomplete or scattered across multiple systems. Technician signoffs on paper routes, parts usage logged separately from work completion, PM schedules in a spreadsheet that don't match the work order system: all audit vulnerabilities, even when the physical maintenance is sound.

✓	What auditors look for	What 'good' looks like / common gap	Gap / Notes
☐	PM plans documented for all critical production equipment	Plans must identify the asset, task description, frequency, required resources and responsible party. Verbal routines or informal rounds don't satisfy this requirement.	
☐	PM schedules tied to operating hours, cycles, or production volume not calendar intervals alone	Calendar-based scheduling is acceptable but weaker. Usage-based or condition-based intervals better reflect actual equipment state and are harder for auditors to challenge.	
☐	PM completion records maintained per work order with technician, timestamp, findings and parts used	Bulk sign-off sheets without individual work order records are a common gap. Each completed PM needs a structured, time-stamped record tied to a specific asset.	
☐	Overdue or deferred PMs documented with justification and rescheduled date	Slipped PMs without a documented reason and new date are a finding. The system should flag overdue work automatically as manual tracking is a compliance risk.	
☐	Full PM history retrievable per asset on demand	Auditors may request the complete PM history for a specific asset on the spot. Retrieval requiring a manual export from multiple systems is itself a gap.	
☐	Contractor and third-party maintenance work included in PM records	External contractor work must be in the same system as internal work. Contractor invoices alone do not satisfy the traceability requirement.	

2. Calibration and measurement equipment

IATF 16949 Clause reference:
71.5 / IATF 71.5.x monitoring and measuring resources: calibration and traceability

Why auditors look here:

IATF 16949 requires that monitoring and measuring equipment is calibrated at specified intervals with records maintained and traceable to national or international standards. When an out-of-tolerance instrument is found, there must be a documented assessment of what product was potentially affected and a traceability mechanism to identify the relevant work orders and parts. Auditors probe both the forward process (was it calibrated?) and the retrospective one (what was affected when it wasn't?).

Calibration is one area where Tier 1 plants frequently receive customer audit findings, particularly when a production problem triggers a retrospective review. Auditors don't just want to know that equipment was calibrated. They want to know it was in calibration when it was used and that you can prove it.

Loop calibration and reverse traceability

Attune EAM's calibration module supports loop calibration; a set of instruments grouped and calibrated together, where the input/output of the whole group determines pass/fail status. When an instrument is swapped or moved, the loop history is preserved. This is the native mechanism for IATF reverse traceability: when an out-of-tolerance event is found, Attune EAM can identify every work order and part that instrument touched since its last valid calibration.

✓	What auditors look for	What 'good' looks like / common gap	Gap / Notes
☐	Complete register of all measurement and test equipment requiring calibration	Register must include instrument ID, description, location, calibration interval and the standard it calibrates against. Equipment in use but not on the register is a finding.	
☐	Calibration schedule generates work orders automatically at defined intervals	Manual calendar reminders are a risk. Calibration due dates should trigger work orders automatically as missed calibrations during high-production periods are a common gap.	
☐	Calibration records capture as-found and as-left condition	A record confirming only 'calibration performed' is insufficient. As-found condition (in or out of tolerance before adjustment?) and as-left condition are both required.	
☐	Out-of-tolerance findings trigger a documented retrospective product review	When equipment is found out of calibration, there must be a documented assessment of what product was affected since the last valid calibration. Traceability to work orders and affected parts is required.	
☐	Calibration status visible on equipment at point of use	Physical calibration labels or tags are standard practice. Equipment without a visible current calibration status is a finding regardless of what the system shows. .	
☐	Calibration certificates traceable to national or international standards	External lab certificates must reference the standard used. Internal calibrations must reference a traceable master standard. 'Calibrated against another instrument' without traceable reference is non-compliant.	

3. Total productive maintenance (TPM)

IATF 16949 Clause reference:
IATF 16949 clause 8.5.1.5 total productive maintenance

Why auditors look here:

Clause 8.5.1.5 is the flagship maintenance clause in IATF 16949. It defines 10 sub-requirements (a-j) covering PM scheduling, spare parts availability, maintenance objectives, OEE measurement, predictive maintenance capability, autonomous maintenance and maintenance skills management. Enterprise Asset Management (EAM) provides the structural capability for all 10 sub-requirements natively but satisfying them in an audit depends on how the system was configured at implementation.

TPM is a methodology. EAM is the tool that supports it. The clause doesn't ask whether EAM is installed; it asks whether TPM is operating. That means OEE is being measured, autonomous maintenance checklists are in use, maintenance objectives are defined and tracked and predictive maintenance capability exists where warranted. Configuration at implementation is what connects EAM's structural capability to the clause's operational requirements.

3a. OEE and the 'six big losses' framework

Clause 8.5.1.5(f) requires maintenance performance objectives to include OEE (Overall Equipment Effectiveness). OEE is calculated from three factors: Availability (planned vs. unplanned downtime), Performance (actual vs. ideal cycle time) and Quality (good parts vs. total parts produced). The 'six big losses' framework maps directly to these three factors and provides the analytical structure for identifying where losses concentrate.

✓	What auditors look for	What 'good' looks like / common gap	Gap / Notes
☐	OEE calculated and tracked for critical production equipment	OEE = Availability × Performance × Quality. World-class manufacturing typically targets OEE above 85%. Tracking OEE by asset and by shift identifies where losses are concentrated.	
☐	Downtime events classified by loss category including breakdown, setup/adjustment, minor stoppage, reduced speed	The six big losses classification is the standard analytical framework. Work order closure should capture loss category so losses can be trended across assets and over time.	
☐	OEE trends reported at defined intervals and used to inform maintenance strategy decisions	OEE data collected but not acted on doesn't satisfy the clause. There must be evidence that OEE trends inform PM scheduling, predictive maintenance investments and capital decisions.	
☐	MTBF and MTTR tracked per critical asset and benchmarked over time	MTBF and MTTR are the operational KPIs underlying OEE. EAM generates these from work order history. The key is that they're being used to inform decisions not just reported.	

3b. Autonomous maintenance

Autonomous maintenance, where production operators perform routine checks, cleaning, lubrication and minor adjustments, is one of the eight pillars of TPM. Clause 8.5.1.5(c) requires that maintenance responsibilities be defined and communicated. Autonomous maintenance extends that to operator-level accountability and is a common focus area in Tier 1 automotive audits.

✓	What auditors look for	What 'good' looks like / common gap	Gap / Notes
☐	Operator inspection checklists defined for critical equipment and executed at scheduled intervals	EAM supports operator checklists. The checklist structure should be digitalized; paper-based autonomous maintenance rounds create the same documentation gaps as paper-based PM records.	
☐	Abnormality reporting process defined so operators have a clear, traceable path to raise equipment concerns	Autonomous maintenance only works if operators act on what they find. There must be a defined process for raising abnormalities and a record that each concern was received and acted on.	
☐	Maintenance responsibilities clearly assigned between operators and maintenance technicians	The boundary between what operators handle and what requires a trained technician must be documented. Ambiguity at that boundary is both a compliance risk and an operational one.	
☐	Autonomous maintenance records retained and linked to the asset history	Operator checklist completions, abnormality reports and any corrective work resulting from them should all be traceable to the asset record.	

3c. Predictive maintenance and condition monitoring

Clause 8.5.1.5(g) requires that predictive maintenance methods are used where appropriate. This doesn't mean every plant needs full sensor integration and AI-driven failure prediction. It means the plant has assessed where condition monitoring adds value, applied it where it does and documented that decision.

✓	What auditors look for	What 'good' looks like / common gap	Gap / Notes
☐	Critical assets assessed for predictive maintenance applicability with documented decision	A documented decision per critical asset with condition monitoring applied, predictive maintenance warranted or run-to-failure accepted with rationale to satisfy the clause. The assessment doesn't need to conclude that predictive maintenance is always warranted.	
☐	Condition monitoring data linked to work order triggers where applied	Condition monitoring that generates data but doesn't create work orders isn't functional for predictive maintenance. The link between sensor or inspection findings and maintenance action must be traceable.	
☐	Spare parts availability assessed for critical assets based on failure risk and procurement lead time	Clause 8.5.1.5(h) requires spare parts availability to be managed based on equipment criticality. A critical asset with a 12-week component lead time and no safety stock is a documented gap.	

4. Tooling management

IATF 16949 Clause reference:
IATF 8.5.1.6 tooling management

Why auditors look here:

IATF 16949 clause 8.5.1.6 requires a documented tooling management system covering tool identification, storage, maintenance and change control. EAM provides full native support through tool records, qualification-controlled access, calibration and rotating items management. The risk in most Tier 1 and Tier 2 plants isn't that the system can't do it; it's that tool records weren't set up comprehensively at implementation or haven't been maintained as tooling changes.

✓	What auditors look for	What 'good' looks like / common gap	Gap / Notes
☐	All production tooling registered in EAM with unique identifier, description, location and associated equipment	Tooling not in the EAM register is effectively unmanaged from a compliance perspective. Register completeness should be verified at implementation and audited annually.	
☐	Tool maintenance schedules defined and generating work orders with grinding, reconditioning and replacement intervals documented	Tooling maintenance is subject to the same PM documentation requirements as production equipment. Tool maintenance on an informal basis without work orders is a gap.	
☐	Qualification-controlled tool access so that only certified technicians can use or modify specified tools	EAM's work management module can restrict tool access to qualified personnel. This supports both the IATF tooling clause and safety compliance. The qualification linkage must be configured at implementation.	
☐	Tool change history documented to ensure modifications, reconditioning events and replacements are traceable per tool ID	When a tool is reconditioned or replaced, the change must be recorded in the tool's history. Tool history gaps create traceability failures that surface during customer audits on production defects.	
☐	Rotating tool items tracked for tool life in shots, strokes, or cycles managed against defined replacement thresholds	EAM supports rotating items with cycle-count-based PM triggers. This is the appropriate mechanism for tools with defined shot or stroke life limits, rather than calendar-based intervals.	
☐	Tool storage conditions defined and monitored for controlled tooling	For tooling with defined storage requirements such as temperature, humidity, contamination controls; storage condition records are part of the tooling management trail.	

5. Work order records and failure documentation

IATF 16949 Clause reference:
IATF 16949 clause 8.5.1.1 control of production equipment: failure documentation and corrective action

Why auditors look here:

IATF 16949 requires documented processes for equipment failure response: how failures are investigated, root causes documented, corrective actions taken and effectiveness verified. Auditors look for a closed loop failure identified, root cause documented, corrective action taken, effectiveness verified. An open corrective action without a closure date or effectiveness check is a recurring finding.

Work order quality is where most plants have the largest documentation gap. The work order system captures what happened. What it often doesn't capture clearly, consistently and in a searchable format is what was wrong, what was done about it and whether the fix held.

✓	What auditors look for	What 'good' looks like / common gap	Gap / Notes
☐	All corrective maintenance work documented in a work order before work begins	Reactive work performed without a work order creates a documentation gap. Technicians responding to breakdowns should open a work order before starting work, not after.	
☐	Failure description captured using structured failure codes such as mode, cause, effect and not free text only	Free-text failure descriptions can't be trended or searched reliably. Structured failure codes allow analysis across assets and over time and are what auditors expect to see as evidence of failure analysis.	
☐	Root cause documented for all equipment failures affecting production	Not every breakdown requires a formal 8D, but every production-impacting failure requires documented root cause. The depth of analysis should reflect the severity of the failure.	
☐	Corrective actions linked to work orders with named owner and target completion date	Corrective actions must be traceable to the failure that generated them. Open corrective actions with no owner or due date are a finding in every IATF audit.	
☐	Corrective action effectiveness verified and documented at a defined interval after closure	Closing a corrective action requires evidence the action worked with a re-occurrence check at a defined interval. A work order closed without an effectiveness review is technically still open under the standard.	
☐	MTBF and MTTR tracked for critical assets and used to inform maintenance strategy	These KPIs need to be in use, not just reported. Auditors expect evidence that the data influences PM scheduling and capital decisions.	



6. Equipment failure contingency planning

IATF 16949 Clause reference: IATF 8.8 / 7.1.3.1 contingency planning for equipment failure	Why auditors look here: IATF 16949 requires documented contingency plans for equipment failures that could affect the customer supply chain. Auditors want evidence that critical equipment is identified, failure scenarios are pre-planned and those plans are tested and current.
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Contingency planning is one area where the documentation requirement is explicitly forward-looking rather than retrospective. The standard wants evidence that failure scenarios were thought through before they happened not just that the plant responded well after the fact.

✓	What auditors look for	What 'good' looks like / common gap	Gap / Notes
☐	Critical production equipment identified with documented risk assessment	All equipment whose failure could affect delivery to the customer needs a contingency plan. That list should be documented and reviewed when production configuration changes.	
☐	Documented contingency plan per critical asset including backup options, response time, escalation path and customer communication protocol	Plans without owners and response time commitments don't hold up in audit. Customer notification protocols such as who calls, when and with what information must be specified, not assumed.	
☐	Critical spare parts identified and inventory levels maintained based on procurement lead time and failure risk	An asset with a 6-week component lead time and no safety stock is a contingency gap. Spare parts strategy for critical assets should be documented and reviewed annually.	
☐	Contingency plans reviewed and updated at defined intervals and after significant production changes	Plans that haven't been reviewed since the last major production change are not valid. Annual review is standard; any significant line reconfiguration should trigger an out-of-cycle review.	

7. Document control, electronic records and change management

IATF 16949 Clause reference:
Clause 7.5 / 8.5.6 documented information and change control

Why auditors look here:

IATF 16949 requires that maintenance records are controlled, protected and retained for defined periods. Electronic records require version control, access control and defined retention. Changes to maintenance processes, equipment configuration, or software used in production require documented change management with an approval record.

Document control is where maintenance teams often inherit compliance problems they didn't create. An engineer updates a PM procedure without routing it through change management. A technician informally modifies work instructions. A software version change on production equipment without a record. These are all IATF findings and they tend to surface because auditors specifically look for evidence that changes are controlled.

✓	What auditors look for	What 'good' looks like / common gap	Gap / Notes
☐	Maintenance work instructions and PM procedures version-controlled with current versions clearly identified	Previous versions should be archived, not deleted. Technicians working from outdated printed procedures is a shop-floor audit finding that comes up consistently.	
☐	Changes to maintenance procedures, PM intervals, or critical spare parts lists documented with approval record	Informal updates by maintenance managers without a change record are a gap. The change management requirement applies to process changes, not just equipment changes.	
☐	Equipment configuration changes recorded in the asset history .	When production equipment is modified such as new components, software updates and configuration changes, the change must be in the asset history. Equipment records that don't reflect current configuration are a traceability failure.	
☐	Maintenance records retained per a defined retention schedule enforced by the system	The retention schedule should be systematic, not ad hoc. Records lost because someone deleted a folder are a compliance event, not just an operational inconvenience.	
☐	Role-based access control governing who can view, edit and approve maintenance records	Records must be protected from unauthorized modification. Role-based permissions in EAM including read vs. edit vs. approve by user group are the standard mechanism.	
☐	Electronic signatures log the action against a named user with timestamp where authorization is required	Where authorized signatures are required on work order completion or record changes, the electronic signature must create a named, timestamped audit trail. System logins are the accepted standard.	



Before your next audit, here are three things to check this week:

01 Pull the PM completion record for your three most critical assets: Is it complete, time-stamped and in one place?

02 Check the calibration register to see if any instruments overdue and did the system flag them automatically?

03 Pick a corrective action from the last six months and trace it from failure report to effectiveness verification. Can you do that in under five minutes?

How Attune EAM supports IATF 16949 compliance

The checklist in Part 1 describes what the standard requires. This section covers how Attune EAM supports each requirement. Most plants aren't non-compliant because they don't do the maintenance work; they're non-compliant because the system used to document it wasn't built to produce audit-ready records. Paper-based systems, spreadsheet supplements and legacy CMMS platforms create structural documentation gaps, not because people aren't careful, but because the system makes it easy to do maintenance and difficult to prove it.

What a modern EAM solution should do for compliance

Compliance requirement	What EAM needs to do	Common gap in legacy systems
PM documentation (7.1.3.1)	Auto-generate and schedule PM work orders, flag overdue work, retain full completion history per asset including parts, findings and technician.	PM schedules in a separate spreadsheet; completion logged in CMMS but parts usage and findings recorded elsewhere.
Calibration and traceability (7.1.5)	Calibration register, auto-generated work orders at defined intervals, as-found and as-left data capture, loop calibration for reverse traceability, out-of-tolerance review workflow.	Calibration tracked in a separate lab spreadsheet with no connection to the asset record or work order history.
TPM / OEE (8.5.1.5)	OEE calculation from work order data, loss category classification, MTBF/MTTR reporting, operator checklist execution, condition monitoring integration.	OEE calculated manually in Excel from production data; no operator checklist digitalization; maintenance and production data not integrated.
Tooling management (8.5.1.6)	Tool register with unique IDs, maintenance schedules, qualification-controlled access, rotating item cycle tracking, change history per tool.	Tools tracked informally; no system-enforced qualification control; tool maintenance reactive and undocumented.
Failure documentation (8.5.1.1)	Structured failure code capture (mode, cause, effect), corrective actions with owners and due dates linked to work orders, effectiveness verification workflow.	Free-text failure descriptions only; corrective actions in a separate quality system with no link to the maintenance record.
Document control (7.5)	Version control on work instructions, electronic signatures on work order completion and record changes, full audit trail on record modifications, role-based access.	Work instructions on a shared drive with no version control; work order sign-off is a physical signature on a paper printout.

How Attune EAM addresses each clause



Preventive maintenance (7.1.3.1)

Attune EAM generates, schedules and auto-closes PM work orders based on calendar intervals, operating hours, cycle counts or condition triggers. Overdue PMs are flagged automatically. Every completed work order carries a structured record: technician, timestamp, findings, parts used and any deviations. PM history is retrievable per asset on demand.



Calibration and traceability (7.1.5)

The calibration module maintains a full instrument register with auto-generated work orders at defined intervals. As-found and as-left data is captured per calibration event. Loop calibration groups instruments calibrated together, preserving the group history when instruments are swapped or moved which is the native mechanism for IATF reverse traceability. Out-of-tolerance results trigger a documented review workflow.



Total productive maintenance (8.5.1.5)

Attune EAM supports all 10 sub-requirements of clause 8.5.1.5 structurally. OEE is derived from work order data: availability from downtime records, performance from cycle time tracking, quality from defect records. Operator autonomous maintenance checklists are digitalized natively. MTBF and MTTR are generated automatically from work order history. The eight pillars of TPM include autonomous maintenance, planned maintenance, focused improvement, early equipment management, quality maintenance, training, safety and office TPM and all have structural support in EAM. Configuration at implementation connects these capabilities to the clause requirements.



Tooling management (8.5.1.6)

Attune EAM maintains tool records with unique identifiers, maintenance schedules and full change history. Qualification-controlled access restricts tool use and modification to certified personnel. Rotating items management tracks tool life against defined thresholds such as shots, strokes, cycles and triggers replacement work orders automatically. Tool calibration is managed through the same calibration module as production measurement equipment.



Work order and failure documentation (8.5.1.1)

Structured failure codes are configurable per asset type, ensuring consistent capture across the maintenance team. Corrective actions are created directly from work orders, assigned to named owners and tracked to closure. Effectiveness verification is a configurable workflow step and a corrective action that cannot be closed without a documented verification record. MTBF and MTTR are generated automatically from work order history.



Electronic records and document control (7.5)

Attune EAM's electronic records and signatures module creates timestamped, versioned records of every significant event: work order completion, record changes, approval actions. Version control on work instructions is managed within the system. Every insertion, update, or deletion of a record is logged against the named user with timestamp and previous value retained and supports the full audit trail auditors look for.



Tier 1 plants using Attune EAM have reduced IATF audit preparation time from two weeks to two days. The reduction comes from documentation that's structured, current and retrievable by design not assembled under pressure before each audit cycle.

Talk to an Octave Automotive Industry Technology Specialist

If the checklist surfaced gaps you want to work through in the context of your plant, a 30-minute assessment call is the right starting point. Structured around your asset management setup and not a product demo.

[Book a 30-Min Assessment Call](#)

This guide is a preparation and self-assessment tool. It is not a substitute for formal IATF 16949 certification audits or legal compliance advice. IATF 16949:2016 clause references are provided for orientation. Consult the standard directly for authoritative requirements.

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.

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