IATF - International Automotive Task Force

IATF 16949:2016 – Sanctioned Interpretations

IATF 16949 1st Edition was published in October 2016 and was effective 1 January 2017. The following Sanctioned Interpretations were determined and approved by the IATF. Unless otherwise indicated, Sanctioned Interpretations are applicable upon publication.

Revised text is shown in **blue**.

A Sanctioned Interpretation changes the interpretation of a rule or a requirement which itself then becomes the basis for a nonconformity.

SI 1-9 issued in October 2017, effective October 2017.
SI 10-11 issued in April 2018, effective June 2018.
SI 8 revised and reissued in June 2018, effective July 2018.
SI 10 revised and reissued in June 2018, effective July 2018.
SI 12-13 issued in June 2018, effective July 2018.
SI 14-15 issued in November 2018, effective January 2019.

SI 16 - 18 issued in October 2019, effective January 2020.
SI 4 revised and reissued in August 2020, effective September 2020
SI 19 issued in August 2020, effective October 2020
SI 20 issued in December 2020, effective January 2021
SI 10 revised and reissued in April 2021, effective June 2021
SI 3 revised and reissued July 2021, effective November 2021
SI 21-22 issued July 2021, effective November 2021
SI 10 revised and reissued in July 2021, effective August 2021

NUMBER	IATF 16949 REFERENCE	SANCTIONED INTERPRETATION
1	**3.1** **Terms and definitions for the automotive industry**	**customer requirements** all requirements specified by the customer (e.g., technical, commercial, product and manufacturing process-related requirements, general terms and conditions, customer-specific requirements, etc.) **Where the audited organization is a vehicle manufacturer, vehicle manufacturer subsidiary, or joint venture with a vehicle manufacturer, the relevant customer is specified by the vehicle manufacturer, their subsidiaries, or joint ventures.** *Rationale for change:* *Customer requirements are developed by vehicle manufacturers for application in their supply chain by the nature of the product realization process. Therefore, where the vehicle manufacturers are being certified, the vehicle manufactures define how customer approvals and/or input are managed.*
2	**4.4.1.2** **Product safety**	The organization shall have documented processes for the management of product-safety related products and manufacturing processes, which shall include but not be limited to the following, where applicable: a) – m) (…) NOTE: Special approval **of safety related requirements or documents may be required by the customer or the organization's internal processes.** ~~is an additional approval by the function (typically the customer) that is responsible to approve such documents with safety-related content.~~ *Rationale for change:*

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2 **(cont.)**	**4.4.1.2** **Product safety**	*Clarify any confusion related to special approval review for safety related requirements or documents.*
3 **Revised**	**6.1.2.3** **Contingency plans**	The organization shall: a) – b) (…) c) prepare contingency plans for continuity of supply in the event of any of the following, **but not limited to**[3]: key equipment failures (also see Section 8.5.6.1.1); interruption from externally provided products, processes, and services; recurring natural disasters; fire; **pandemics**[3]; utility interruptions; **cyber-attacks on information technology systems**[1]**;** labour shortages; or infrastructure disruptions; d) include, as a supplement to the contingency plans, a notification process to the customer and other interested parties for the extent and duration of any situation impacting customer operations; e) periodically test the contingency plans for effectiveness (e.g. simulations, as appropriate); **for cybersecurity:**[3] **testing may include a simulation of a cyber-attack, regular monitoring for specific threats, identification of dependencies and prioritization of vulnerabilities. The testing is appropriate to the risk of associated customer disruption;** **Note: cybersecurity testing may be managed internally by the organization or subcontracted as appropriate**[2] f) conduct contingency plan reviews (at a minimum annually) using a multidisciplinary team including top management, and update as required; g) document the contingency plans and retain documented information describing any revision(s), including the person(s) who authorized the change(s)**;.** h) **include in contingency plans the development and implementation of appropriate employee training and awareness.**[3]

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3 (cont.) Revised	**6.1.2.3 Contingency plans**	The contingency plans shall include provisions to validate that the manufactured product continues to meet customer specifications after the re-start of production following an emergency in which production was stopped and if the regular shutdown processes were not followed. ***Rationale for change:*** *[1]Organizations need to address the possibility of a cyber-attack that could disable the organization's manufacturing and logistics operations, including ransom-ware. Organizations need to ensure they are prepared in case of a cyber-attack.* *[2] Moved from SI 17 and combined to make one SI for this IATF 16949 clause. Cybersecurity is a growing risk to manufacturing sustainability in all manufacturing facilities, including automotive. Contingency testing has also been identified by organizations and CBs as an area in need of clarification. This update provides details of what is to be tested as part of a cyber-attack contingency plan validation.* *[3] Minor clarifications, including addition of pandemics in situations requiring contingency plans. Also, recognition that employee knowledge is a key step for an effective contingency plan.*

NUMBER	IATF 16949 REFERENCE	SANCTIONED INTERPRETATION
4 Revised	**7.2.3 Internal auditor competency**	The organization shall have a documented process(es) to verify that internal auditors are competent, taking into account any **requirements defined by the organization and/or**[1] customer-specific requirements. For additional guidance on auditor competencies, refer to ISO 19011. The organization shall maintain a list of qualified internal auditors. Quality management system auditors~~, manufacturing process auditors, and product auditors~~[1] shall ~~all~~[1] be able to demonstrate the following minimum competencies: a) understanding of the automotive process approach for auditing, including risk-based thinking; b) understanding of applicable customer-specific requirements; c) understanding of applicable ISO 9001 and IATF 16949 requirements related to the scope of the audit; d) understanding of applicable core tool requirements related to the scope of the audit; e) understanding how to plan, conduct, report, and close out audit findings. **~~Additionally,~~ At a minimum,**[1] manufacturing process auditors shall demonstrate technical understanding of the relevant manufacturing process(es) to be audited, including process risk analysis (such as PFMEA) and control plan. **At a minimum,**[1] product auditors shall demonstrate competence in understanding product requirements and use of relevant measuring and test equipment to verify product conformity. **~~Where training is provided~~ If the organization's personnel provide the training**[1] to achieve competency, documented information shall be retained to demonstrate the trainer's competency with the above requirements. f) … g) [2]

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4 (cont.) Revised	**7.2.3 Internal auditor competency**	***Rationale for change:*** [1]*Distinguish competency requirements for quality management system auditors, manufacturing process auditors, and product auditors. Clarified the trainer competency expectations for internally provided training.* [2]*Revised to show that requirements f) and g) were not excluded*
5	**7.5.1.1 Quality management system documentation**	The quality manual shall include, at a minimum, the following: a) the scope of the quality management system, including details of and justification for any exclusions; b) documented processes established for the quality management system, or reference to them; c) the organization's processes and their sequence and interactions (inputs and outputs), including type and extent of control of any outsourced processes; d) a document (~~i.e., matrix~~ **for example, a table, a list, or a matrix**) indicating where within the organization's quality management system their customer-specific requirements are addressed. ***Rationale for change:*** *Some CBs and organizations wanted clarification that a matrix was not a mandatory document. A matrix is just one of multiple methods that are acceptable. The format used is up to the organization.*

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6	**8.3.3.3 Special characteristics**	The organization shall use a multidisciplinary approach to establish, document, and implement its process(es) to identify special characteristics, including those determined by the customer and the risk analysis performed by the organization, and shall include the following: a) documentation of ~~all~~ special characteristics in the **product and/or manufacturing documents** ~~drawings~~ (as required), **relevant** risk analysis (such as **Process** FMEA), control plans, and standard work/operator instructions; special characteristics are identified with specific markings and are ~~cascaded through each of these documents;~~ **documented in the manufacturing documents which show the creation of, or the controls required, for these special characteristics**; ***Rationale for change:*** *Clarifies the documentation of special characteristics in the product and/or manufacturing drawings.*
7	**8.4.2.1 Type and extent of control - supplemental**	The organization shall have a documented process to identify outsourced processes and to select the types and extent of controls used to verify conformity of externally provided products, processes, and services to internal (organizational) and external customer requirements. The process shall include the criteria and actions to escalate or reduce the types and extent of controls and development activities based on supplier performance and assessment of product, material, or service risks. **Where characteristics or components "pass through" the organization's quality management system without validation or controls, the organization shall ensure that the appropriate controls are in place at the point of manufacture.** ***Rationale for change:*** *Clarify the organization's responsibilities for pass through characteristics.*

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8 Revised	**8.4.2.3 Supplier quality management system development**	The organization shall require their suppliers of automotive products and services to develop, implement, and improve a quality management system **(QMS) with the ultimate objective of**[1] **eligible organizations**[2] **becoming certified to this Automotive QMS Standard.**
		
		Using a risk-based model, the organization shall define a minimum acceptable level of QMS development and a target QMS development level for each supplier.
		
		~~certified to ISO 9001, unless otherwise~~ **Unless otherwise**[1] authorized by the customer ~~[e.g., item a) below],~~ **a QMS certified to ISO 9001 is the initial minimum acceptable level of development. Based on current performance and the potential risk to the customer, the objective is to move suppliers through the following QMS development progression:** ~~with the ultimate objective of becoming certified to this Automotive QMS Standard. Unless otherwise specified by the customer, the following sequence should be applied to achieve this requirement:~~
		    ~~a) compliance to ISO 9001 through second-party audits;~~[1]
		    b) certification to ISO 9001 through third-party audits; unless otherwise specified by the customer, suppliers to the organization shall demonstrate conformity to ISO 9001 by maintaining a third-party certification issued by a certification body bearing the accreditation mark of a recognized IAF MLA (International Accreditation Forum Multilateral Recognition Arrangement) member and where the accreditation body's main scope includes management system certification to ISO/IEC 17021;
		    c) certification to ISO 9001 with compliance to other customer-defined QMS requirements (such as Minimum Automotive Quality Management System Requirements for Sub-Tier Suppliers [MAQMSR] or equivalent) through second-party audits;
		    d) certification to ISO 9001 with compliance to IATF 16949 through second-party audits;

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8 (cont.) Revised	**8.4.2.3 Supplier quality management system development**	e) certification to IATF 16949 through third-party audits (valid third-party certification of the supplier to IATF 16949 by an IATF-recognized certification body). NOTE: The minimum acceptable level of QMS development may be compliance to ISO 9001 through second-party audits, if authorized by the customer. ***Rationale for change:*** [1]*Clarified the expected supplier quality management system development progression. This approach supports the "Risk Based Thinking" concept emphasized throughout Section 8.4 of the standard.* [2]***Additional clarification added in the first paragraph to address those organizations that are not eligible for IATF 16949 certification (examples including but not limited to the following: scrap metal suppliers, trucking companies who provide transport and logistics support, etc.).***
9	**8.7.1.1 Customer authorization for concession**	The organization shall obtain a customer concession or deviation permit prior to further processing whenever the product or manufacturing process is different from that which is currently approved. The organization shall obtain customer authorization prior to further processing for "use as is" and **rework for repair (see 8.7.1.5) dispositions** of nonconforming product. If sub-components are reused in the manufacturing process, that sub-component reuse shall be clearly communicated to the customer in the concession or deviation permit. ***Rationale for change:***

NUMBER	IATF 16949 REFERENCE	SANCTIONED INTERPRETATION
9 (cont.)	**8.7.1.1 Customer authorization for concession**	*Clarify requirements and eliminate contradiction in relation to customer approval associated with rework.*
10 Revised	**7.1.5.3.2. External laboratory**	External/commercial/independent laboratory facilities used for inspection, test, or calibration services by the organization shall have a defined laboratory scope that includes the capability to perform the required inspection, test, or calibration, and either: — the laboratory shall be accredited to ISO/IEC 17025 **or its national equivalent (e.g., CNAS-CL01 in China) by an accreditation body (Signatory) of the ILAC MRA (International Laboratory Accreditation Forum Mutual Recognition Arrangement – **www.ilac.org**)**[1] ~~or national equivalent~~[2] and include the relevant inspection, test, or calibration service in the scope of the accreditation (certificate); the certificate of calibration or test report shall include the mark of a national accreditation body; or — **where ~~an~~ non-**[5]**accredited laboratory is** ~~not available~~ **utilized**[5] ~~(e.g.~~ **for example, but not limited to:** ~~for~~[5] **specialist or integrated equipment,** ~~or for~~[5] **parameters with no international traceable standard reference,**[4] **or original equipment manufacturers**[5]**), the organization is responsible to ensure that there is evidence that the laboratory has been evaluated and meets the requirements of Section 7.1.5.3.1 of IATF 16949.**[4] — ~~there shall be evidence that the external laboratory is acceptable to the customer.~~[4]

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10 (cont.) Revised	**7.1.5.3.2. External laboratory**	~~NOTE: Such evidence may be demonstrated by customer assessment, for example, or by customer-approved second-party assessment that the laboratory meets the intent of ISO/IEC 17025 or national equivalent. The second-party assessment may be performed by the organization assessing the laboratory using a customer-approved method of assessment.~~ ~~Calibration services may be performed by the equipment manufacturer when a qualified laboratory is not available for a given piece of equipment. In such cases, the organization shall ensure that the requirements listed in Section 7.1.5.3.1 have been met.~~ ~~Use of calibration services, other than by qualified (or customer accepted) laboratories, may be subject to government regulatory confirmation, if required.~~[3, 4] **Note: integrated self-calibration of measurement equipment, including use of proprietary software, does not meet the requirements of calibration.**[4] *Rationale for change:* *Some organizations found the lab accreditation requirements for external/commercial/independent laboratory facilities used for inspection, test, or calibration services confusing and needed clarification. Clarified lab accreditation requirements and expectations.* *[1] Issued April 2018* *[2] Revised June 2018* *[3] Reissued to show that the note and subsequent paragraphs were not excluded.* *[4] Clarified conditions under which a non-accredited laboratory may be used, where the original equipment manufacturer may be used, deleted the note, and acceptability of equipment self-calibration (April 2021). Also deleted the sentence about regulatory confirmation since that is not a government requirement.*

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10 (cont.) Revised	**7.1.5.3.2. External laboratory**	[5] *Further clarifications provided explaining the conditions and assessment required if non-accredited laboratories are used; including for test and measurement original equipment manufacturers.*
11	**8.5.6.1.1 Temporary change of process controls**	The organization shall identify, document, and maintain a list of the process controls, including inspection, measuring, test, and error-proofing devices~~., that includes the primary process control and the approved back-up or alternate methods.~~ **The list of process controls shall include the primary process controls and the approved back-up or alternate methods, if back-up or alternate methods exist.** ***Rationale for change:*** *Clarified that not every primary process control has a back-up or alternate method. Clarified that if a back-up or alternate method exists, that those back-up or alternate methods are included on a list maintained by the organization. It is not a requirement to have an alternative process control for every primary control.*

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12	**5.1.1.2 Process effectiveness and efficiency**	Top management shall review the ~~product realization processes~~ **effectiveness and efficiency of the quality management system** ~~and support processes~~ to evaluate and improve ~~their effectiveness and efficiency~~ **the organization's quality management system**. The results of the process review activities shall be included as input to the management review (see Section 9.3.2.1.). ***Rationale for change:*** *Clarified that not every process requires an efficiency measure. The organization needs to determine which processes require efficiency measures within their quality management system. Additionally, the organization's problem-solving processes need to have an effectiveness review conducted by the organization's management.*

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13	**9.3.2.1 Management review inputs – supplemental**	Input to management review shall include: a) cost of poor quality (cost of internal and external nonconformance); b) measures of process effectiveness; c) measures of process efficiency **for product realization processes, as applicable**; d) product conformance; e) assessments of manufacturing feasibility made for changes to existing operations and for new facilities or new product (see Section 7.1.3.1); f) customer satisfaction (see ISO 9001, Section 9.1.2); g) review of performance against maintenance objectives; h) warranty performance (where applicable); i) review of customer scorecards (where applicable); j) identification of potential field failures identified through risk analysis (such as FMEA); k) actual field failures and their impact on safety or the environment. ***Rationale for change:*** *Clarified that not every process requires an efficiency measure. The organization needs to determine which processes require efficiency measures within their quality management system.*

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14	**9.2.2.2 Quality management system audit**	The organization shall audit all quality management system processes over ~~each~~ a three-year **audit cycle** ~~calendar period~~, according to an annual programme, using the process approach to verify compliance with this Automotive QMS Standard. Integrated with these audits, the organization shall sample customer-specific quality management system requirements for effective implementation. **The complete audit cycle remains three years in length. The quality management system audit frequency for individual processes, audited within the three-year audit cycle, shall be based upon internal and external performance and risk. Organizations shall maintain justification for the assigned audit frequency of their processes. All processes are required to be sampled throughout the three-year audit cycle and audited to all applicable requirements in the IATF 16949 standard, including ISO 9001 base requirements, and any customer-specific requirements.** *Rationale for change:* *Clarified that the audit cycle remains three years in length. Deleted IATF 16949 FAQ 18 and put former FAQ 18 2nd paragraph requirements into SI 14. Clarified that all processes are to be audited during the three-year audit cycle.*

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15	3.1 Terms and definitions for the automotive industry	**embedded software** **Embedded software is a specialized programme stored in an automotive component (typically computer chip or other non-volatile memory storage) specified by the customer, or as part of the system design, to control its function(s). To be relevant in the scope of IATF 16949 certification, the part that is controlled by embedded software must be developed for an automotive application (i.e., passenger cars, light commercial vehicles, heavy trucks, buses, and motorcycles; see Rules for achieving and maintaining IATF Recognition, 5th Edition, Section 1.0 Eligibility for Certification to IATF 16949, for what is eligible for "Automotive").** **NOTE: Software to control any aspect of the manufacturing process (e.g., machine to manufacture a component or material) is not included in the definition of embedded software.** *Rationale for change:* *Minimize confusion regarding embedded software and what is applicable.* *Deleted IATF 16949 FAQ 10.*

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16	**9.3.2.1 Management review inputs – supplemental**	Input to management review shall include: a) cost of poor quality (cost of internal and external nonconformance); b) measures of process effectiveness; c) measures of process efficiency for product realization processes, as applicable; d) product conformance; e) assessments of manufacturing feasibility made for changes to existing operations and for new facilities or new product (see Section 7.1.3.1); f) customer satisfaction (see ISO 9001, Section 9.1.2); g) review of performance against maintenance objectives; h) warranty performance (where applicable); i) review of customer scorecards (where applicable); j) identification of potential field failures identified through risk analysis (such as FMEA); k) actual field failures and their impact on safety or the environment**;** **l) summary results of measurements at specified stages during the design and development of products and processes, as applicable.** ***Rationale for change:*** *In the section "8.3.4.1 Monitoring" the summary results of measurements at specified stages during the design and development of products and processes was required as an input to management review; however, it was not displayed in the section 9.3.2.1. Measurements may consider, for example: timing, costs, or feasibility.*

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17	**6.1.2.3 Contingency plans**	~~a) – d) (…)~~ ~~e) periodically test the contingency plans for effectiveness (e.g. simulations, as appropriate);~~ ~~**cybersecurity testing may include a simulation of a cyber-attack, regular monitoring for specific threats, identification of dependencies and prioritization of vulnerabilities. The testing is appropriate to the risk of associated customer disruption;**~~ ~~**Note: cybersecurity testing may be managed internally by the organization or subcontracted as appropriate**~~ ***Rationale for change:*** *Combined with SI 3, since that is for the same IATF 16949 clause*
18	**7.1.3.1 Plant, facility, and equipment planning**	The organization shall use a multidisciplinary approach including risk identification and risk mitigation methods for developing and improving plant, facility, and equipment plans. In designing plant layouts, the organization shall: a) optimize material flow, material handling, and value-added use of floor space including control of nonconforming product; ~~**and**~~ b) facilitate synchronous material flow, as applicable**; and** c) **implement cyber protection of equipment and systems supporting manufacturing.** ***Rationale for change:*** *Cybersecurity is not limited to the support functions and office areas using computers. Manufacturing also uses computerized controls and equipment which would be at risk to*

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18 (Cont.)	**7.1.3.1 Plant, facility, and equipment planning**	*cyber-attack. This addition drives the implementation of necessary protections to ensure continued operation and production to meet customer requirements.*

19	**8.4.2.4 Supplier monitoring**	The organization shall have a documented process and criteria to evaluate supplier performance in order to ensure conformity of externally provided products, processes, and services to internal and external customer requirements.
		
		At a minimum, the following supplier performance indicators shall be monitored:
		
		  a) delivered product conformity to requirements;
		  b) customer disruptions at the receiving plant, including yard holds and stop ships;
		  c) delivery schedule performance;
		  ~~d) number of occurrences of premium freight.~~
		
		If provided by the customer, … in their supplier performance monitoring:
		  e) … f)
		
		Rationale for change:
		
		Premium freight is already included as part of the Customer Satisfaction requirement defined in 9.1.2.1. Measuring occurrences of premium freight from suppliers is also outside the scope of the organisation's quality management system as this is an internal supplier performance metric.

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20	**10.2.3 Problem Solving**	The organization shall have a documented process(es) for problem solving, **which prevent(s) recurrence,** including: a) defined approaches for various types and scale of problems (e.g., new product development, current manufacturing issues, field failures, audit findings); b) containment, interim actions, and related activities necessary for control of nonconforming outputs (see ISO 9001, Section 8.7); c) root cause analysis, methodology used, analysis, and results; d) implementation of systemic corrective actions, including consideration of the impact on similar processes and products; e) verification of the effectiveness of implemented corrective actions; f) reviewing and, where necessary, updating the appropriate documented information (e.g., PFMEA, control plan). Where the customer has specific prescribed processes, tools, or systems for problem solving, the organization shall use those processes, tools, or systems unless otherwise approved by the customer. ***Rationale for change:*** *Corrective actions are often observed to miss the important step of prevention of recurrence. Prevention of recurrence has now been added as a requirement.*

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21	**6.1.2.1 Risk Analysis**	The organization shall include in its risk analysis, at a minimum~,~**:** **a)** lessons learned from product recalls, product audits, field returns and repairs, complaints, scrap, and rework**,** **b) cyber-attack threats to information technology systems.** The organization shall retain documented information as evidence of the results of risk analysis. ***Rationale for change:*** *Potential cyber-attacks pose a risk to all certified organizations due to the valuable information held within their information technology systems. Organizations need to consider potential cyber-attacks in their risk analysis.*
22	**7.2.1 Competence – supplemental**	The organization shall establish and maintain a documented process(es) for identifying training needs including awareness (see Section 7.3.1) and achieving competence of all personnel performing activities affecting conformity to product and process requirements. Personnel performing specific assigned tasks shall be qualified, as required, with particular attention to the satisfaction of customer requirements. **To reduce or eliminate risks to the organization, the training and awareness shall also include information about prevention relevant for the organization's working**

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22 (cont.)	**7.2.1 Competence - supplemental**	**environments and employees' responsibilities, such as recognizing the symptoms of pending equipment failure and/or attempted cyber-attacks.** ***Rationale for change:*** *Employee knowledge is a key enabler to prevent issues from becoming significant, including identifying potential equipment failure and cyber-attacks.*