

GM Customer Specifics - ISO/TS 16949

December 2003

General Motors Customer Specific Requirements - ISO/TS16949

1. Scope

ISO/TS 16949:2002, Second Edition, March 1, 2002, "Quality management systems – Particular requirements for the application of ISO 9001:2000 for automotive production and relevant service part organizations," and this document define General Motors fundamental quality system requirements for organizations where automotive customer-specified parts, for production and/or service are manufactured. To satisfy supplier quality system requirements, General Motors will accept, as optional to QS-9000, a third party certification to ISO/TS 16949 that meets the following conditions:

- The certification scope must include both ISO/TS 16949 and the accompanying ISO/TS 16949 GM-Customer Specific Requirements,
- The certification must be conducted in compliance with the IATF recognized automotive certification scheme by a certification body contracted and recognized by an IATF Oversight office.

NOTE: The Quality System Requirements, QS-9000, 3rd Edition (QS-9000:1998), expires on December 14, 2006.

All **ISO/TS 16949:2002** requirements and the requirements of this document shall be addressed in the organization's quality management system.

2. References

- 2.1 DaimlerChrysler, Ford Motor, General Motors **Quality System Requirements (QS-9000), Third Edition**, March, 1998.
- 2.2 DaimlerChrysler, Ford Motor, General Motors **Production Part Approval Process (PPAP), Third Edition**, September, 1999.
- 2.3 DaimlerChrysler, Ford Motor, General Motors **Statistical Process Control (SPC), First Edition**, 1992.
- 2.4 DaimlerChrysler, Ford Motor, General Motors **Advanced Product Quality Planning and Control Plan**, June, 1994.
- 2.5 DaimlerChrysler, Ford Motor, General Motors **Measurement Systems Analysis, MSA Third Edition**, March, 2002.
- 2.6 DaimlerChrysler, Ford Motor, General Motors **Potential Failure Mode and Effects Analysis, FMEA Third Edition**, July 2001.
- 2.7 **IAF Guidance on the Application of ISO/IEC Guide 62:1996**, December, 2001.
- 2.8 **IATF Guidance to ISO/TS 16949:2002**, AIAG Edition, 2002.
- 2.9 **Automotive certification scheme for ISO/TS 16949:2002, Rules for Achieving IATF Recognition, First Edition for ISO/TS 16949:2002**, March, 2002.
- 2.10 **ISO/TS 16949:2002, 1st Edition, March 2002**
- 2.11 **ISO/TS 16949:1999, First Edition (2nd Printing)**, March, 1999.

The latest edition of the reference documents listed applies unless otherwise specified by the GM Procuring Division. Copies of **QS-9000, PPAP, APQP, FMEA, MSA, SPC, IATF Guidance, ISO/TS 16949 "Rules", ISO/TS 16949 Checklist, ISO/TS 16949:1999**, and other related manuals are available from AIAG at 1-248-358-3003. Copies of ISO documents are available from the American National Standards Institute (ANSI) at (212) 642-4980.

GM Customer Specifics - ISO/TS 16949 December 2003

The above references listed as requirements are described in section 4 of this document.

GM Customer Specifics - ISO/TS 16949

December 2003

3. Definitions

Where inconsistent terminology exists between **ISO/TS 16949:2002** and this document, this document shall take precedence. Otherwise the definitions from **ISO/TS 16949:2002** apply to this document.

3.1 Accredited Laboratory

Accredited Laboratory is one that has been reviewed and approved by a nationally-recognized accreditation body, or as an alternative a customer recognized accreditation body, conforming to ISO/IEC Guide 58 for calibration or test laboratory accreditation to ISO/IEC Guide 17025, or national equivalent.

NOTE: The above definition also applies to the QS-9000 reference manuals currently in effect.

3.2 Active Part

An active part is one currently being supplied to the customer for original equipment or service applications. The part remains active until tooling scrap authorization is given by the appropriate customer activity. For parts with no customer-owned tooling or situations where multiple parts are made from the same tool, written confirmation from the customer Purchasing activity is required to deactivate a part.

NOTE: For bulk material, "active part" refers to the bulk material contracted, not the parts that are subsequently produced from that material.

3.3 Aftermarket Parts

Replacement parts not procured or released by OEM for service part applications which may or may not be produced to original equipment specifications.

3.4 Consulting

For the purposes of **TS16949:2002**, consulting is the provision of training, documentation development, or assistance with implementation of quality systems to a specific customer. If these activities are open to the public, advertised, and not customer specific, they are considered training rather than consulting. Other products, processes or services may be offered directly or indirectly, provided they do not compromise confidentiality or the objectivity or impartiality of its certification process or decisions (refer to IAF Guidance on the **Application of ISO/IEC Guide 62**, Issue 2, dated December, 2001.)]

3.5 Customer

References to "customer" in **ISO/TS 16949:2002** and this document shall be interpreted as the Procuring Division of General Motors for suppliers pursuing third party registration to **ISO/TS 16949:2002** to satisfy General Motors **sourcing requirements** third party quality system assessment registration.

3.6 Ergonomics

Ergonomics is the evaluation of the design of a product or process to assure compatibility with the capabilities of human beings. Analysis of motion refers to capabilities of people with respect to tasks (e.g. lifting, twisting, reaching) to prevent or relieve problems of strain, stress, excessive fatigue, etc. Factors involved include anatomical dimensions of the worker, placement of products to be worked upon, placement of buttons/switches, physical loads imposed on the worker, and environmental effects such as noise, vibration, lighting and space.

GM Customer Specifics - ISO/TS 16949

December 2003

3.7 Initial Process Study

Initial Process Studies are short-term studies conducted to obtain early information on the performance of new or revised processes relative to internal or customer requirements. In many cases, preliminary studies should be conducted at several points in the evolution of new processes (e.g. at the equipment or tooling subcontractor's plant, after installation at the supplier's plant). These studies should be based on as many measures as possible. When

utilizing X-Bar and R charts, at least twenty-five subgroups (minimum of four pieces per subgroup) are required to obtain sufficient data for decision-making. When this amount of data is not available, control charts should be started with whatever data is available. See **Production Part Approval Process** manual.

3.8 PPM

PPM (parts per million) is a method of stating the performance of a process in terms of actual nonconforming material. PPM data can be used to prioritize corrective actions. Definition of defective units varies with customer (e.g. all sorted, only those found to be wrong, all in box). (Reference GP-5 Supplier Quality Processes and Measurements Procedure, GM1746 for additional PPM definition.)

3.9 Quality Indices

See DaimlerChrysler, Ford, General Motors **Statistical Process Control** reference manual.

3.10 Organization

Organizations are defined as providers of: a) production materials, b) production or service parts, or c) heat treating, plating, painting or other finishing services, directly to General Motors or other customers subscribing to this document.

NOTE: In QS-9000, these providers are typically referred to as suppliers to DaimlerChrysler, Ford and General Motors however for the purpose of this document they are defined as the "organization" or "supply organization." ISO/TS 16949:2002 (See also Section 3 Terms and definitions.)

3.11 Service parts

Replacement parts manufactured to OEM specifications, which are procured or released by the OEM for service part application.

3.12 Suppliers

Suppliers (previously called subcontractors in QS-9000) are defined as providers of production materials, or production or service parts, directly to an organization provider of General Motors or other customers subscribing to this document. Also included are providers of heat-treating, painting, plating or other finishing services.

3.13 Value-Added Production Processes

Activities or operations for which a customer would be willing to pay, if given the option.

See also **ISO/TS 16949:2002, Second Edition** (March, 2002), definition of "manufacturing" 3.1.6, "site" 3.1.11, and "remote location" 3.1.10.

4. Requirements

GM Customer Specifics - ISO/TS 16949

December 2003

4.1 ISO TS 16949:2002 (Second Edition), March, 2002- Related Requirements

All references to clauses in this section pertain to ISO/TS 16949:2002, unless otherwise stated.

4.1.1 Tooling Management

The requirements for tooling management (7.5.1.5) may not be applicable to warehouses or distributors as remote sites.

4.1.2 Records Retention

Production part approvals, tooling records, APQP records, purchase orders and amendments shall be maintained for the length of time that the part (or family of parts) is active (see Definitions 3.1) for production and service requirements plus one calendar year unless otherwise specified by the customer.

NOTE: All customer purchase orders/amendments are included in this requirement. Organization purchase orders/amendments for customer-owned tooling are included in this requirement.

Quality performance records (e.g. control charts, inspection and test results) shall be retained for one calendar year after the year in which they were created.

Records of internal quality system audits and management review shall be retained for three years.

Retention periods longer than those specified above may be specified by an organization in their procedures. The organization shall eventually dispose of records.

These requirements do not supersede any regulatory requirements. All specified retention periods shall be considered "minimums".

4.1.3 Electronic Communication

Reference cl.-7.2.3.1

NOTE: Examples of such systems for suppliers to GM's North American Operations are: 1) requirement planning information such as the Electronic Data Interchange (EDI) ANSI ASC X12 830 transaction set or the EDIFACT DELFOR message, and 2) shipping schedules such as the ANSI ASC X12 862 or 866 transaction sets or the EDIFACT DELJIT message.

4.1.4 Shipment Notification System

GM Customer Specifics - ISO/TS 16949

December 2003

Reference cl. 7.2.3.1

NOTE: Examples of such systems for suppliers to GM's North American Operations are: 1) the ANSI ASC X12 856 transaction set, or 2) the EDIFACT DESADV message. For EDI assistance, contact 01-810-947-5566. For EDIFACT assistance, and confirmation of the required implementation date for a supplier, contact 01-248-265-9907.

4.1.5 Special Characteristics

The supplier shall use General Motors **Key Characteristic Designation System** definitions and symbols to comply with **ISO/TS 16949:2002** special characteristics requirements (e.g. cl. 7.2.1.1), and as provided in 4.2.2, General Procedures and Other Requirements, and 4.2.2.11, **Key Characteristic Designation System (KCDS)**, (GM 1805 QN) which defines GM's approach to "special" characteristics.

4.1.6 Design Changes

All design changes, including those proposed by suppliers, shall have written customer approval, or waiver of such approval, prior to production implementation. See cl. 7.3.7 and 7.1.4. See also the **Production Part Approval Process** manual.

For proprietary designs, impact on form, fit, function, performance, and/or durability shall be determined with the customer so that all effects can be properly evaluated.

4.1.7 Official Language Version

The English language version of **ISO/TS 16949:2002** or QS-9000, 3rd Edition and related reference documents shall be the official version for purposes of third party registration.

Sanctioned translations shall:

- be for reference only,
- reference the English language as the official version,
- not contain **ISO 9001:2000** text verbatim, and
- include General Motors in the copyright statement.

Any other language translations are not authorized.

4.1.8 Part Approval Process

The supplier shall comply with the Chrysler, Ford, GM **Production Part Approval Process (PPAP)** manual to comply with cl. 7.3.6.3

1. PPAP-Vehicle Assembly Centers (Assembly Plants)

Unless otherwise specified by the Customer, PPAP requirements for vehicle assembly centers shall be taken from a specified production run of saleable pilot vehicles.

4.1.9 Customer Satisfaction

GM Customer Specifics - ISO/TS 16949

December 2003

Trends in quality system performance and customer satisfaction (see Cl. 5.2, 5.6.1.1, 7.4.3.2, and 8.2.1.1) should be compared to those of competitors, or appropriate benchmarks, and reviewed by top management.

4.1.10 Internal Auditor Qualifications

Internal auditors should be qualified as recommended in **ISO 19011, 1st Edition – Sections 7.1-7.5, for Quality Management Systems application.** In addition internal auditors should be competent in understanding and applying the Process Approach of Auditing (See “Process Approach”, Section 0.2 of ISO/TS 16949:2002), Core Tools (e.g. reference manuals including PPAP, APQP, MSA, SPC, and FMEA) as applicable, and GM Customer Specifics, as applicable.

NOTE: A process and plan with implementation monitoring to assure qualified internal auditors is evidence of compliance.

4.1.11 Supplier Quality Management System Development (cl. 7.4.1.2)

Note: This supplier development clause, cl. 4.1.2, applies to suppliers of the organization who are providers of production materials, or production or service parts, directly to a supplier to Chrysler, Ford, General Motors or other customers subscribing to this document. Also included are providers of heat-treating, painting, plating or other finishing services. Indirect and service providers are not included in this requirement, e.g. distributors adding no manufacturing value, logistics, sequencers, parts packagers, tooling & equipment.

Note: The use of customer-designated suppliers to the organization (subcontractors) does not relieve the supplier of the responsibility for ensuring the quality of subcontracted parts, materials and services.

4.1.11.1 Customer acceptance of QS-9000:1998

Registration to QS-9000:1998, (QS-9000, 3rd Edition) shall be accepted as an alternative to registration to ISO 9001:2000.

4.1.11.2 Customer acceptance of 2nd Party Audits and Criteria for Approval

General Motors Corporation will recognize 2nd Party audits as compliance to ISO/TS 16949:2002, Clause 7.4.1.2 and as an alternative to ISO 9001:2000 certification. The statement of authorization below provides the requirements and conditions for GM approval.

A supply organization that utilizes 2nd party assessment to comply with clause 7.4.1.2 is required by General Motors to utilize second party assessors who satisfy all elements of the criteria specified as “GM approved 2nd Party requirements” stated below.

GM-approved 2nd Party requirements:

1. The supply organization (2nd Party) must be ISO/TS 16949 certified and registered by the IATF.
2. The supply organization (2nd Party) cannot be on ISO/TS 16949 probation or suspension.
3. The supply organization (2nd Party) must utilize a qualified ISO Lead Auditor, or a

GM Customer Specifics - ISO/TS 16949

December 2003

qualified Internal Auditor with evidence of their successful completion of training, such as AIAG "Internal Auditing for ISO/TS 16949," or evidence of a minimum of five internal ISO/TS 16949 audits under the supervision of a qualified Lead Auditor.

4. The supply organization (2nd Party) must audit annually each qualifying subcontractor for whom it has performed a 2nd Party assessment, and maintain records of these audits.
5. The duration of these audits must conform to the full application of the Audit Day Requirements table of the current edition of "Automotive Certification Scheme for ISO/TS 16949:2002, Rules for achieving IATF recognition".
6. Any of the IATF recognized and currently approved auditors may perform such audits when contracted by the supply organization.

4.1.11.3 Supplier Development of Specially Designated Small Suppliers

When a supplier (subcontractor) to an organization is so small as to not have adequate resources to develop a system according to ISO/TS 16949:2002 or ISO 9001:2000 certain specified elements may be waived by the organization of their supplier. The organization shall have decision criteria in writing, approved by the customer and applied consistently to determine the specially designated suppliers for which this provision may apply.

Note: ISO 9001:2000 and ISO/TS 16949:2002 contain fundamental quality system requirements of value to any size of provider of production/ service parts/ materials. There are a number of methods to implement a compliant system, so it is recognized that a simpler Quality Management System approach could be used for the smaller suppliers of organizations to which ISO/TS 16949, clause 7.4.1.2 applies.

GM Customer Specifics - ISO/TS 16949

December 2003

4.2 General Motors - Specific Requirements

4.2.1 Third-Party Registration Requirements

Production and Service Part Suppliers to General Motors, including GM Holdens, shall be third-party registered to **ISO/TS 16949:2002**, including the requirements in this document, by an IATF-recognized certification body using the current edition in effect of the automotive registration scheme, "**Automotive Certification Scheme for ISO/TS 16949:2002, Rules for achieving IATF recognition.**" In the alternative, supply organizations for which certification applies, may satisfy General Motors third party registration requirements by obtaining certification to ISO/TS 16949:1999 by an IATF recognized certification body in accordance with the appropriate and current "Rules" for certification until December 15, 2003, or to QS-9000:1998 by an automotive registration scheme recognized by General Motors until December 14, 2006. Such certification shall include the requirements in this document, or in the case of QS-9000:1998, the General Motors-Specific Requirements.

NOTE 1: Supply organizations to General Motors certified to ISO/TS 16949:1999 may upgrade certification to ISO/TS 16949:2002 for the period of up to one year after 15 December 2003, consistent with the surveillance cycle.

NOTE 2: Supply organizations to General Motors who fit the applicability requirements of ISO/TS 16949:2002 and are not certified to ISO/TS 16949:2002 by 14 December 2006, at a minimum, are subject to New Business Hold – Quality status. See also 4.2.3, ISO/TS 16949:2002 Applicability, and 4.2.8, Certification Body Notification and Certification – New Business Hold-Quality.

NOTE 3: Waiver of supply organization certification for those organizations who meet the applicability requirements of ISO/TS 16949:2002 is not permitted unless approved in writing by the following: GM North America - General Motors Group Manager, Global Supplier Quality and Development, GM Europe - Exec. Dir Supplier Quality and Readiness, GM Asia Pacific – Director, Supplier Quality/Development, GM LAAM – Director of Supplier Quality Engineering.

4.2.2 General Procedures and Other Requirements

The GM publications listed below contain additional requirements or guidance that shall be met, if applicable, by GM supply organizations, or unless otherwise specified by GM Procuring Divisions. Specific questions on the content of these publications should be directed to the appropriate contact at the GM Procuring Division. (The latest revisions for these documents can be found on the GM SupplyPower website.)

GM Supply Organizations shall verify annually that they are using the latest version of these documents:

4.2.2.1 Pre-Production/Pilot Material Shipping Procedures, (GM 1407).

4.2.2.2 Supplier Submission of Match Check Material, (GM 1689).

GM Customer Specifics - ISO/TS 16949

December 2003

4.2.2.3 Shipping Parts Identification Label Standard, (GM 1724).

4.2.2.4 Component Verification & Traceability Procedure, (GM 1730).

Note: APPLICABILITY OF GM 1730 IS LIMITED TO GM POWERTRAIN.

4.2.2.5 Traceability Identifier Equipment (TIR 15-300), (GM 1731).

4.2.2.6 Bar Code Standard for Part/Component/Module Identification and Traceability (GM 1737).

4.2.2.7 Supplier Quality Processes and Measurements Procedure, (GM 1746).

4.2.2.8 Continuous Improvement Procedure, (GM 1747).

4.2.2.9 GP-10 Evaluation and Accreditation Test Facilities, (GM 1796/A).

- See ISO/TS 16949:2002, cl., 7.6.3

4.2.2.10 Shipping and Delivery Performance Requirements, (GM 1797).

4.2.2.11 Key Characteristic Designation System (KCDS), (GM 1805 QN).

4.2.2.12 GP-11 General Procedure for Pre-Prototype and Prototype Material, (GM 1820).

4.2.2.13 C4 Technology Program, GM - Supplier C4 Information, (GM 1825).

4.2.2.14 GP-12 Early Production Containment Procedure, (GM 1920).

4.2.2.15 Run-at-Rate Procedure, (GM 1960).

NOTE: Access the GM SupplyPower web-site for the current document version.

GM Customer Specifics - ISO/TS 16949

December 2003

4.2.3 ISO/TS 16949:2002 Applicability

ISO/TS 16949:2002 with this document applies to all applicable contracted GM supply organizations (see Definitions 3.9) utilizing ISO/TS 16949 to satisfy General Motors third party certification requirements for quality system assessment.

NOTE: QS-9000:1998 (3rd Edition) expires December 14, 2006, and QS-9000 certified supply organizations are strongly urged to upgrade to ISO/TS 16949:2002. In addition, supply organizations certified to ISO/TS 16949:1999 are strongly urged to upgrade to ISO/TS 16949:2002 before 15 December 2003, but no later than 15 December 2004 consistent with the surveillance cycle in effect or upon expiration of their current certificate whichever occurs first.

4.2.4 UPC Labeling For Commercial Service Applications

GM Service Parts Operations (SPO) requires use of UPC labeling for certain commercial applications rather than AIAG labeling. Contact your SPO buyer for instructions.

4.2.5 Layout Inspection and Functional Test

Unless specified otherwise by a GM Procuring Division, there is no customer-established frequency for layout inspection after receiving production part approval (PPAP). Reference is made to ISO/TS 16949:2002, cl.8.2.4.1

4.2.6 Customer Signature on Control Plan

General Motors does not provide waivers to suppliers for control plan approval because General Motors signatures on the Control Plan are not required.

4.2.7 GM Holdens-Specific Requirements

Previously listed specific requirements for additional documents for GM Holdens in Australia are obsolete. GM Holdens operates in accordance with GM Customer Specifics.

4.2.8 Certification Body Notification and Certification Status – “New Business Hold – Quality”

The organization shall notify its Certification Body within 5 business days after being placed in GM New Business Hold – Quality. The status of “New Business Hold – Quality” shall be a violation of clause 8.2.1.1 Customer satisfaction – Supplemental.

The certification of the organization shall be placed on immediate probation * by the certification body of record upon receiving notice of GM “New Business Hold – Quality.”

*See Annex 4, **Automotive Certification Scheme for ISO/TS 16949:2002, Rules for achieving IATF recognition.**

GM Customer Specifics - ISO/TS 16949

December 2003

1. In the event of certification probation as a result of an organization receiving notice of General Motors "New Business Hold – Quality," the organization shall complete a corrective action plan. The supplier shall submit the corrective action plan to the Certification Body of record and to the affected customer(s) within 10 business days of the date of the letter of notification of probation. The corrective action plan of the organization shall be consistent with the affected customer(s) requirements including correction steps, responsibilities, timing information, and key metrics to identify effectiveness of the action plan.
2. Before any probation can be lifted, the Certification Body of record will conduct an on-site assessment of appropriate length to verify effective implementation of all corrective actions.
3. If probation is not lifted within four months of its issuance, the Certification Body of record shall revoke the ISO/TS 16949 certificate of the organization. Exceptions to this revocation shall be justified in writing by the Certification Body based upon its on-site review of the organization's corrective action plan effectiveness and agreement obtained from the affected GM customer(s).

NOTE 1: The permitted probation period for General Motors Europe (GME) is six (6) months.

NOTE 2: The GM special supplier status conditions of CS I (Controlled Shipping – Level I), or CS II (Controlled Shipping – Level II) are performance indicators of organization product realization problems. Such status should have resolution, or credible resolution and corrective plans in place, which are confirmed by the customer.

4.2.9 Similar Requirements

Where similar requirements are contained in both **QS-9000:1998** and **ISO/TS 16949:2002**, the requirements in **ISO/TS 16949:2002** take precedence for suppliers choosing to use **ISO/TS 16949:2002** rather than **QS-9000**.

4.2.10 Management Review

Management review of quality system performance (Cl. 5.6.1.1) at a minimum shall be conducted at planned intervals, but not less than annually.

GM Customer Specifics - ISO/TS 16949 December 2003