Supplier Quality Manual for Indirect Procurement

Contents

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Revision of this Supplier Quality Manual available on Internet Portal

This manual will be reviewed and updated on a regular basis. The latest released version is available to all suppliers at the HARMAN Supplier Portal. The current web location for this site is:

http://www.harman.com/supply-chain

1. Introduction

The high expectations and standards placed by HARMAN International and its customers on the quality of the products and delivery performance require high supplier capability. Fundamental to the common success for supplier, customer and HARMAN is target-oriented partnership-based cooperation between HARMAN and the supplier.

HARMAN expects not only a zero defect and zero ppm philosophy from suppliers, but also excellent performance regarding delivery performance, cost competitiveness, technological support, best-in-class problem solving process and 6cooperation/communication.

This Supplier Quality Manual (SQM) describes the expectations placed by HARMAN on its suppliers regarding quality and delivery performance, as well as the formalities and processes which must be followed in partnership with HARMAN.

Supplier shall establish document, implement, and maintain a management system in accordance with HARMAN requirements and applicable international quality, environmental and safety standards.

1.1. Scope

These requirements of this manual are applicable for all deliveries of equipment, services, or intangible assets to HARMAN Automotive that directly affect the fulfilment of customer requirements by HARMAN Automotive´s products.

NOTE: In this document, HARMAN International will be referred to simply as HARMAN. HARMAN's Automotive Division will be referred to as AUTO. Parts, materials, equipment, any other type of product, and services in the scope of this manual will be referred to as OUTPUT. Companies providing these OUTPUTS to HARMAN will be referred to as SUPPLIERS.

These guidelines are valid for all HARMAN AUTO locations, worldwide. The general requirements outlined herein do not supersede conflicting requirements in the HARMAN contract, applicable engineering specifications and process specifications, or applicable long-term agreements.
Requirements regarding production materials that will be incorporated directly into HARMAN Automotive products are defined in the Supplier Quality Manual F4033735.

1.2. General Language Requirement

All SUPPLIER documentation submitted to HARMAN must be issued in English. For HARMAN internal product transfers from one HARMAN location to another HARMAN location, documentation previously submitted in languages other than English must be resubmitted in English.

1.3. WEB Portals

HARMAN may ask a SUPPLIER to use dedicated internet portals to exchange data for quality activities, complaints, audit findings and inspections. Upon receipt of HARMAN´s request, SUPPLIER shall confirm and complete the tasks within the required due date.

2. General Management System Requirement

2.1. General Quality Management System Requirement

All parties concerned must contribute towards achieving and implementing the objectives of the HARMAN quality policy and quality principles and must promote continual improvement.

HARMAN requires all SUPPLIERS to develop, implement, and continuously improve a quality management system conforming on ISO 9001 requirements. Unless otherwise specified by HARMAN, SUPPLIERS 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.

The HARMAN supplier selection and supplier evaluation process takes the certifications status of SUPPLIER into consideration.

SUPPLIERS must inform HARMAN of changes of the status of their quality management system certification not later than one month after this change. Upon request, SUPPLIER shall provide HARMAN copies of such certificates.

The SUPPLIERS in AUTO shall adhere to requirements and procedures defined in followings:

- AIAG CQI-19 Sub tier Supplier Management
- AIAG CQI-20 Effective Problem-Solving Guide,
- AIAG & VDA FMEA-Handbook,
- VDA volume 6.3 – Process Audit
- VDA 8D – Problem Solving in 8 Disciplines
- Automotive SPICE (if applicable)

HARMAN requires SUPPLIERS of software to implement and maintain a process for software quality assurance for their products. A software development assessment methodology shall be utilized to assess the software development process. The SUPPLIERS are requested to retain documented information of a software development capability self-assessment.

SUPPLIERS must also guarantee that sub-suppliers have provided for adequate quality-assurance measures and will commit themselves to fulfilling their obligations per this Supplier Quality Manual. SUPPLIERS to HARMAN are solely responsible for all purchased subcomponents or other 3rd party deliveries used in their OUTPUTS, even if the sub-supplier or subcomponent was directed by HARMAN.

2.2. General Environmental Management System Requirements

HARMAN has established an environmental management system in accordance with ISO 14001 requirements. The HARMAN environmental policy contains a commitment to continuously improve environmental performance and to prevent environmental pollution and uphold relevant laws and regulations. HARMAN transfers this self-commitment to all SUPPLIERS.

HARMAN, therefore, requires its SUPPLIERS to develop and uphold an environmental management system and to undertake continual improvement. SUPPLIERS must inform HARMAN of changes of the status of their environmental management system certification not later than one month after this change.

2.3. Environmental Regulatory Compliance

Suppliers shall abide and be responsible by the laws, regulations, technology standards relating to environmental protection, including but not limited to RoHS, WEEE, REACH, pollution prevention, appropriate disposal of wasters. General Regulatory Compliance.

2.4. General Regulatory Compliance

In general, HARMAN expects that all SUPPLIERS comply with all applicable national and international legal requirements.

2.5. Electrostatic Discharge – ESD

Electronic components can be damaged through electrostatic discharge. HARMAN requires applicable SUPPLIERS to implement, maintain and continuously improve a ESD control system adhering to relevant industry standards and regulations, such as ANSI/ESD 20/20 or IEC61340. SUPPLIERS are encouraged to achieve 3rd party certification for this system. Suppliers shall inform HARMAN about their certification status and changes thereof no later than one month after this change.

2.6. Product Safety & Conformity Representative (PSCR)

2.6.1. General requirements

Every organization within the automotive supply chain is obliged to ensure the safety and conformity of its products. To this end, in the respective countries and regions current legal statutes on product integrity must be observed, also the justifiable safety expectations of the public must be fulfilled. With products conspicuously “unsafe” in the market, or whose conformity to legal requirements is questionable, those responsible are obliged to initiate the necessary actions.

To be aware of and to understand the many demands addressed a product safety representative, comprehensive information and qualification is necessary.

2.6.2. Product Safety Officer - PSO

The SUPPLIER shall appoint a Product Safety Officer (PSO) who acts as a central point of contact to HARMAN. One PSO shall be designated per supplier’s production plant. This requirement needs to be cascaded down to entire supply chain.

2.6.2.1. Knowledge

The PSO shall have proven knowledge about:

- Functionality of the supplied OUTPUT, the details of production at own site and proper use in the vehicles or with the respective subsequent client in the supply chain (Tier 2 and subsequent Tiered suppliers). If necessary, material usage recommendations (e.g., raw materials, materials) must be coordinated and agreed within the requirement.
- Product Safety Act and the Product Liability Act.
- Risks Assessment methods and their application.

Based on this, a suitable, supplier-specific training concept can be set up for the qualification of multiple product safety representatives within the scope of a company-specific PSB network, provided that comparable content is conveyed, comprehended, and documented accordingly.

2.6.2.2. Tasks

The PSO shall have following tasks:

- Contributing to, developing, and setting priorities for eliminating or preventing product safety-relevant defects in the product development phase (error prevention).
- Working independently, initiating, and verifying product, process, and engineering-relevant decisions during product development and additional product enhancement (e.g., FMEA or risk assessment procedures) if there is an impact relevant to safety.
- Preparing, maintaining, and enhancing “lessons learned” checklists for the qualified review of designs, production, processes, or for the material properties under product-safety relevant aspects.
- Executing or initiating and assessing component or material analyses with the goal of detecting indications of deviations relevant to product safety at an early stage.
- Independently executing or initiating regular inspections of processes, production, material, and products of the current series for the confirmation of product safety for proper and predictable use or misuse and the introduction as well as tracking of (immediate) measures in the case of relevant deviations.
- Assessing the probability and frequency of failure of the affected product in the event of failure.
- In the event of a complaint, the planned remedial measures, their implementation, and long-term effectiveness shall be verified. The effectiveness of the measures shall be reviewed, confirmed, and documented in writing by the supplier PSO.
- In the event of a complaint or voluntary declaration, communication shall be directed via the person responsible for component QA. The respective contact persons shall be determined in advance for downstream clients in the supply chain (tier N).

- The PSO shall advise with respect to the quality and confidentiality of the information (clear information regarding the error pattern, limitation, probability of failure, etc.)

2.6.2.3. Competencies

The PSO should report directly to management, the plant manager, or the quality assurance manager. The PSO should be able to initiate the blocking of components or materials of the current series in the event of safety and image-relevant complaints, etc. (also if these threaten series application for reasons of safety), including resource control regarding bench tests, validation, analyses, etc.

2.6.3. Product Safety & Conformity Representative - PSCR

In the meanwhile, the automotive industry is not only asking for a PSO, but also for a Conformity Officer. The positions can be held by separate persons, or also be held by one person. I case one person holds both positions, this person would be the so called PSCR – Product Safety & Conformity Representative (see VDA Product Integrity).

2.7. Information Security Management System

Supplier shall implement an Information Security Management System (ISMS) to manage information security in its organization and the supply chain.
To demonstrate compliance with industry standard requirements the SUPPLIER shall obtain for its ISMS either.

- ISO/IEC 27001 certification, or
- TISAX labels based on the VDA Information Security Assessment Unless defined otherwise by contract or SoW the TISAX assessment objective shall include “Handling of information with very high protection needs.”

2.8. Identification & Traceability Requirement

SUPPLIER shall implement a system that provides traceability backwards from the identity of a delivered OUTPUT (e.g., based on serial number, release version, production timestamp, …) to the materials, processes, subcontracted services, or any other inputs contributing to this OUTPUT. This traceability data shall be stored in a database and are subject to the record retention provisions provided in this manual. On request SUPPLIER shall make the respective data available for HARMAN within 24 hours.

SUPPLIER shall ensure that their deliveries to HARMAN are adequately marked to identify identity and quantity of packing unit shipped to HARMAN – for deliveries of intangible products or services an equivalent documentation shall be provided.

2.9. General Disaster Recovery & Business Continuity Plan

SUPPLIERS shall implement a Risk Management and Disaster Recovery Plan for potential catastrophes or work interruptions that would interrupt the supply of their OUTPUT to HARMAN. This Disaster Recovery Plan shall comply with ISO 9001 requirements for Contingency Plans and include at a minimum contingency plan to address interruptions due to material supply, transportation, computer, personnel, or sub-supplier issues.

The Recovery Plan should take a proactive approach including a plan of action, checklist of activities, communication plans, escalation procedures, and organization with teams, roles, and responsibilities. A Disaster Recovery Plan must be in place for all sites and operations involved in delivering OUTPUTS to HARMAN. SUPPLIER must immediately notify HARMAN of the course of action during any period of actual interruption as well as the chain of command contacts.

3. Supplier Approval

HARMAN has a defined procedure for evaluating, qualifying, and selecting new SUPPLIERS.

The target is to use a SUPPLIER only after it has been established that they can fulfil HARMAN requirements. Depending on the product for which the SUPPLIER is to be sourced, specific documentation may be required from the SUPPLIER and other activities may be introduced.

A potential SUPPLIER may be requested to perform a self-assessment according to HARMAN´s audit procedure or applicable industry standards (e.g., VDA 6.3). In this case the SUPPLIER shall provide a report of the observations and findings during the self-assessment to HARMAN. In case of a subsequent HARMAN audit SUPPLIER´S self-assessment report will be used as a baseline document.

HARMAN determines whether a HARMAN audit is necessary after considering the complexity and technology incorporated in the OUTPUT, risk related to usage of the OUTPUT in HARMAN´S product, vendor quality registration status, etc. If an audit is found necessary, HARMAN will conduct this audit using the appropriate audit forms.

HARMAN reserves right to delegate the execution of a HARMAN audit to a third party chosen by HARMAN. The SUPPLIER shall provide access to SUPPLIER`S facilities during the audit. A corrective action plan must be generated for the findings at the self-assessment as well as for the findings at the HARMAN-audit. Failure to complete the corrective action plan in-time or to demonstrate the effectivity of improvements may result in refusal of the internal approval.
HARMAN reserves the right to schedule follow-up audits or re-audits at its discretion.

After positive results from an overall evaluation (registration documents, audit result, etc.) a sample order (one component/project) may be placed with the SUPPLIER.
HARMAN will evaluate SUPPLIER´s responses and performance at project execution. If this order result is positive and finally approved the supplier approval will be considered complete. For further business, HARMAN will select SUPPLIERS according to the supplier selection process. HARMAN will inform the SUPPLIER of the result of the approval process. In case the approval is denied, the SUPPLIER may be granted a defined time to implement improvements and to reapply for approval. A supplier approval given by HARMAN does not imply an obligation for HARMAN to place any orders at the respective SUPPLIER.

4. Supplier Blocking

HARMAN has a defined procedure for blocking a SUPPLIER. All departments at HARMAN can initiate the process for blocking a SUPPLIER. Potential reasons for applying for blockage could be, e.g.:

- Insufficient quality performance,
- Insufficient supply performance,
- Insufficient project work,
- Repeatedly bad rating (C or B) with regards to the supplier evaluation without any recognizable improvement (see chapter “Supplier Evaluation”),
- No improvements from implemented supplier development activities,
- No improvement after execution of Supplier Quality Improvement Plan – SQIP.

5. Quality assurance in all Phases of Cooperation

In all phases of cooperation, from concept-phase to product and process development-phases, and finally to production, all necessary actions to assure quality need to be performed at the SUPPLIER and referenced in a statement of work.

5.1. Feasibility Assessment

In the concept phase, the SUPPLIER is obligated to evaluate HARMAN requirements (inclusive applicable CSR – customer specific requirements) with respect to performance and process requirements, time schedule, capacity, quality targets, and any other requirements provided in a SoW for feasibility.

The SUPPLIER shall complete a feasibility study and provide the results to HARMAN Procurement using the HARMAN Form F1834959 if requested.

5.2. Special Characteristics

During product and process development, the supplier must consider special characteristics as defined by HARMAN.

These special characteristics may relate to OUTPUT, the process to create this OUTPUT, or both. In addition to special characteristics specified by HARMAN, additionally the SUPPLIER shall identify characteristics deemed critical. In case that no special characteristics for OUTPUT or process are defined by HARMAN, the SUPPLIER must identify special characteristics on its own. The special characteristics must be highlighted in appropriate documents, like FMEA, control-plan, drawings, etc.
SUPPLIER shall define methodology to consistently achieve conformity of special characteristics using industry accepted tools appropriate for the respective OUTPUT. These tools may include systematic failure avoidance (poka-yoke), 100% inspection, statistical process control (SPC), process capability monitoring, and Measurement system analysis for testing and measurement equipment.

For customer designated special characteristics as noted on HARMAN drawings or specifications, quality records must be retained by the SUPPLIER for 100% of the OUTPUT provided. These records must be made available to HARMAN upon request.

5.3. Risk Management

During the product and process development phase, the SUPPLIER is expected to manage risk by utilizing appropriate tools like e.g., design and process FMEA. Based on the risk assessment adequate mitigation activities must be defined, implemented, and checked for effectivity. The mitigation activities must be documented in respective documents (e.g., control plan, work instructions, checklists, …) The goal is to ensure that f the delivered OUTPUTS comply with the specification and are produced with controlled and capable processes throughout their lifecycle.

HARMAN reserves to request in its own discretion specific mitigation activities from SUPPLIER. These may include, but are not limited to:

- APQP
- PPAP
- Sub-supplier development and management
- Mfg. process readiness checklist
- Mass Production Approval (MPA)
- Safe Launch Plan (SLP)

5.4. Project Management

If SUPPLIER is contracted to produce and deliver an OUTPUT based on HARMAN-defined specifications, then SUPPLIER shall define an appropriate project organization. Individuals from different HARMAN functions will be assigned to be the contact to the SUPPLIER in the phase of product and process-development. The SUPPLIER shall forward a project/organization chart to HARMAN that shows the persons and respective competences of the team involved in the project that will interact with the respective HARMAN team members Unless otherwise agreed the project manager at the SUPPLIER is responsible for the overall coordination and the respective activities.

5.5. Quality Planning

SUPPLIER shall determine the activities needed to ensure conforming OUTPUTS proactively at the start of a project and refine this planning according to progression of the project. This plan shall include.

- all reviews, inspections, checkpoints, etc, including formal approvals by HARMAN or 3rd parties, if applicable
- the characteristics to be checked and acceptance/reject criteria.
- timing, frequency and sample size, responsibility to execute these checks.
- reaction plan in case of any deviations

SUPPLIER shall ensure that these activities are executed according to plan and are consistent with the respective project milestones. All relevant activities must be scheduled, executed, and verified. The project plan must include proper risk mitigation activities and back-up plans. In case of schedule delays or development issues, a suitable recovery plan must be crafted and executed leading to project success. Project scope, division of responsibilities, technical requirements and project schedule should be determined as early as possible. The SUPPLIER shall provide frequent updates on project status. In case of a critical task being delayed immediate notification to HARMAN is required.

5.6. Approval by SUPPLIER and HARMAN, Run@Rate

Depending on the type of OUTPUT to be delivered by SUPPLIER HARMAN may require a formal approval before or at time of delivery. Details will be defined in a SoW or other type of specification. Independently from these specific requirements SUPPLIER shall define, implement, and execute an internal approval process to ensure that only OUTPUTS that have successfully passed all defined quality gates will be delivered to HARMAN.
If the OUTPUT will be provided repeatedly (as a serial delivery) SUPPLIER shall define, implement, and execute a process to release each individual delivery.
If the OUTPUT will be provided repeatedly (as a serial delivery) HARMAN reserves to confirm SUPPLIER´S capability to provide the OUTPUT at the required quality level and at required capacity using a Run@Rate approach. If the Run@Rate shall be executed by the SUPPLIER itself or by HARMAN representatives is subject to individual agreement.

5.7. Quality Alerts

SUPPLIER shall monitor their internal quality performance continuously and define, implement, and execute a system to monitor the performance of their OUTPUTS downstream including – where applicable – at automotive end customers.
In case of any quality setback that might also be relevant to OUTPUTS delivered to HARMAN the SUPPLIER shall inform HARMAN without delay. This information shall identify the scope of OUTOUT that is potentially at risk, an assessment of the expected occurrence rate and the severity of this issue and SUPLLIER´S plan for containment and corrective actions.
HARMAN reserves to request an 8D report irrespective of the impact of the quality setback.

- Quality setbacks may include:
- Negative result in ongoing reliability monitoring.
- Epidemical fails observed on same or comparable OUTPUTS at other customers (Overall production and test yield fall significantly lower than that observed and reported during MPA and Run@Rate influencing the supply situation for HARMAN.

5.8. Control of Non-Conforming OUTPUTS

The SUPPLIER must ensure that all Non-Conforming OUTPUTS are clearly identified and segregated in all processes and areas of the SUPPLIER´S operation. Systems must exist to positively ensure that Non-Conforming OUTPUTS are not inadvertently processed further or provided to HARMAN or its customers.
In case the Supplier discover that there is a possibility that Non-Conforming OUTPUTS have been delivered to HARMAN, the Supplier is responsible to:

- Immediately the HARMAN Procurement and the recipient of the affected OUTPUT This notification cannot be considered complete until a written response has been received from all HARMAN facilities involved.
- Start their process for root cause analysis and corrective action (8D) and report to HARMAN accordingly – see further in chapter “Complaint Handling, Failure Analysis & Problem Solving”.

5.9. Deviation Approval

SUPPLIER shall ensure that all OUTPUTS are produced according to released processes and using the defined inputs and are conforming to all defined requirements. In case SUPPLIER has identified any discrepancy thereof but intends to provide the affected OUTPUT to HARMAN nonetheless SUPPLIER must obtain a written approval prior to the delivery.
To request such a deviation approval SUPPLIER shall contact HARMAN procurement and provide following.

- Identification of the affected OUTPUT, including identity, quantity, and the planned shipping date
- Description of the non-conformity of OUPUT and/or processing
- A risk assessment related to the identified non-conformity.
- SUPPLIER´S plan for containment and corrective actions

Deviation approval is considered as a temporary change request; After HARMAN has determined the change / non-conformity is acceptable, written approval will be granted.

6. Complaint Handling, Failure Analysis & Problem Solving.

6.1. General

To support HARMAN's zero-defect strategy and ensure excellent performance during pre-series and series production phases it is essential that SUPPLIERS define, introduce, and maintain highly effective and efficient problem-solving processes.

SUPPLIER shall utilize their complaint handling, failure analysis and problem-solving process in processing of quality complaints, logistics complaints and audit findings.

SUPPLIERS shall align their complaint handling, failure analysis and problem-solving process to established industry standards, HARMAN's customer specific requirements defined in this manual and applicable OEM customer requirements.
These include:

- ISO 9001
- VDA - 8D – Problem Solving in 8 Disciplines
- AIAG CQI-20 Effective Problem-Solving Guide

Problem solving methodology shall be team-oriented, be based on factual knowledge, and utilize appropriate statistical methods for analysis of data.

6.2. Schedule / Timeline Requirements

HARMAN will notify supplier of non-confirming OUTPUTS without delay after identification.

- Immediately after receiving initial complaint information from HARMAN, SUPPLIER shall identify immediate containment action(s).
- If requested by HARMAN, SUPPLIER shall ensure availability of a resident engineer at the affected HARMAN location latest 48 after the initial notification was issued.
- SUPPLIER shall initiate its internal problem solving immediately after receiving the notification from HARMAN and establish an internal problem-solving team.
- Within 2 working days after receiving notification from HARMAN, SUPPLIER shall provide an initial containment action report. By this time the disciplines D1 thru D3 should be completed by SUPPLIER and the results shall be included in the report.
- Depending on the severity of the non-conformity HARMAN reserves to request regular updates of this report even before the due date of the final report.
- Within 14 calendar days after receiving defective parts – or alternatively a comprehensive failure information (e.g., dimensional reports, pictures, error-logs…) - from HARMAN, SUPPLIER shall provide a final 8D report. By this time also the disciplines D4 thru D7 shall be completed by SUPPLIER and the results shall be included in the report.
- If SUPPLIER is not able to provide a final 8D report within 14 calendar days, an interim report must be provided. Additionally, SUPPLIER shall provide a detailed time-schedule for completing the 8D.
- If permanent corrective actions include design changes or major process changes that are subject to the PCN / CR approval, HARMAN recognizes that the final implementation of these actions may be depending on factors outside SUPPLIER`S direct influence. In those cases, completion of D6 may be delayed to a date agreed with HARMAN in advance.

6.3. Containment Action

Immediate containment action shall ensure that further deliveries of affected OUTPUTS to HARMAN is avoided and affected OUTPUTS at HARMAN or within the supply chain can be identified and segregated. SUPPLIER shall identify the range of product that may be affected in terms of serial number range, date code or identification of affected shipments.

SUPPLIER shall ensure that the supply to HARMAN will not be disrupted. This may be achieved by implementing appropriate additional inspections that can effectively screen-out affected OUTOUTS Supplier shall define and document those processes in work instructions and control plan and provide sufficient training to all operators involved.

6.4. Failure Confirmation

SUPPLIER shall verify or reproduce the non-conformity reported by HARMAN. This process shall include as appropriate.

- Repeating the relevant in-process and outgoing checks for regular deliveries
- Failure-oriented checking of the claimed OUTPUT emulating the application conditions reported by HARMAN.
- Where applicable: evaluating the claimed OUTPUT under “real-life” conditions or simulated environmental stresses and cyclic testing to reproduce sporadic failures.

HARMAN reserves to request a joint analysis at HARMAN to expedite failure confirmation by SUPPLIER.
SUPPLIER shall ensure that such joint analysis can be supported within 5 working days after HARMAN´s request.

6.5. Root Cause Analysis

SUPPLIER shall use a systematic approach for root cause analysis based on findings during failure confirmation, review of production and test records, and physical analysis. Applicable methods include 5-Why-Methodology, Ishikawa-Diagrams, FTA, and process mapping. In general, non-destructive analysis methods should be preferred over those that might destroy the failure condition.

SUPPLIER shall identify all root causes that contributed to the issue observed, including.

- Occurrence root cause(s), i.e., reason(s) that resulted in creation and propagation of a non-conforming characteristic or an inherent weakness of the product, as well as
- Escape root cause(s), i.e., reason(s) that resulted in non-detection of a non-conforming characteristic or an inherent weakness of the product before shipment.
- Systemic root cause(s), i.e., systemic reason(s) that allowed occurrence and escape of the non-conformity.

6.6. Corrective Action

SUPPLIER shall identify corrective actions for all identified occurrence and escape root causes and devise a plan and schedule for implementation. All corrective actions shall be validated, and effectivity shall be confirmed using applicable statistical methods. Immediate containment actions must be kept in place until effectivity of the corrective actions has been confirmed.

For OUTPUTS delivered repeatedly to HARMAN SUPPLIER shall identify the first delivery including each corrective action and provide this information to HARMAN within discipline D6 of the 8D report. SUPPLIER shall evaluate whether the planned corrective action constitutes a supplier-initiated change, that needs notification – and inform HARMAN as applicable.

6.7. Preventive Action

SUPPLIER shall ensure that findings/knowledge gained while executing disciplines D2 thru D6 of the 8D process are extended across similar products and processes and will be considered in quality planning. This should include review of related FMEAs, standard operating procedures, design rules

and similar documents as well as the consideration in the lessons learned process. SUPPLIER shall identify which parts or part families supplied to HARMAN are considered herein.

6.8. Supplier Problem Solving Performance

HARMAN measures effectivity of SUPPLIER´S problem solving process based on quality performance data and 8D reporting. Insufficient performance might result in escalation and blocking of suppliers for new business.

6.9. Communication and Escalation

Each SUPPLIER must provide contact information (phone number and email address) for the appropriate responding resource. HARMAN reserves the right to contact any point of contact and escalate communications to the extent necessary to address any issues that may arise with respect to the OUTPUTS provided by the SUPPLIER.

6.10. Resident Engineer

HARMAN reserves the right to request supplier resident engineering support in response to quality-related events that occur during series production. It is expected that the SUPPLIER will provide an appropriate expert for the required position. The resident engineer shall be equipped, at the supplier's expense, with tools necessary to perform his duties.

While on HARMAN properties, the SUPPLIER resident engineer is expected to be aware of and follow all HARMAN codes of conduct and ethics as well as all laws applicable to the location. Failure to do so will result in the discharge of the resident engineer at which time the supplier will be expected to provide a suitable replacement.

7. Management of Sub-tier Suppliers

7.1. Sub-Supplier Management

The SUPPLIERS are responsible for managing the quality of the sub-suppliers. The requirements provided by HARMAN shall be cascaded to SUPPLIER´S supply chain as appropriate.

SUPPLIER shall implement, maintain, and ensure oversight and monitoring of their Sub-tier suppliers following a documented, risk-based approach that complies with SUPPLIER´s own internal procedures and Quality Management System and HARMAN's specifications, including without limitation, audit rights of the sub-tier supplier. HARMAN may elect to provide input into this risk assessment of SUPPLIER´s sub-tier suppliers and may require SUPPLIER to escalate the risk and consequently the oversight as applicable for the Product.

8. HARMAN Audits

HARMAN employs several audit tools to ensure SUPPLIERS meet appropriate quality levels. These tools are used at various stages throughout the supplier development process, for re-qualification, for mass production approval as well as in case of any problems during mass production. Audits may be conducted by external auditors or by HARMAN employees.

Audit types are as follows:

"Use case"	**Assessment type**	**Tool / questionnaire**
Initial supplier qualification; supplier re-qualification; process release	HW: VDA 6.3 SW: A-SPICE	HW: VDA 6.3 SW: A-SPICE
SIP; actual quality issues	As appropriate (e.g., MPA process walk)	Checklist, report, or similar
Corporate Social Responsibility – CSR	As appropriate	Checklist, report, or similar

The SUPPLIER will make available appropriate management personnel as well as technical personnel for each phase of the above audits. SUPPLIER shall perform self-assessment at least 1 week before HARMAN audit and this self-assessment will be baseline documents for HARMAN onsite audit. Complete access must be granted to all phases of the process creating the OUTPUT. The audit team will be limited in sensitive areas; however, the SUPPLIER must accommodate at least two auditors in all areas.

In general HARMAN expects an action plan to address each non-conformance of the audits within two weeks, to include completion dates agreed upon by HARMAN personnel.

9. Change Management

9.1. Changes initiated by HARMAN.

Changes initiated by HARMAN shall be performed in accordance with the normal HARMAN practices. This will typically include detailed Design interaction as well as Procurement/ Purchasing activities to manage updating quotes and / or contracts, where necessary. Supplier shall ensure that changes are implemented to according to the schedule that was aligned with HARMAN.

9.2. Changes initiated by SUPPLIER

In the case of changes initiated by the SUPPLIER including changes to externally provided inputs, material, processes, facilities creating the OUTPUT packaging as well as any design changes (specification), the SUPPLIER shall submit a Supplier Change Request to HARMAN.
Implementation of such change is only permitted after approval by HARMAN. Where applicable SUPPLIER shall ensure supply of HARMAN approved OUTPUT until SCR is approved

The SCR shall contain following information:

- Identification of the OUTPUT
- Detailed description of change(s),
- Reasons for changes(s) (e.g., commercial, quality, capacity),
- Name, address, telephone, email of supplier contact,
- Implementation date for change,
- Anticipated impact on form, fit, function, or reliability,
- Supplier Qualification plan results, where applicable,
- Customer parts number(s),
- Date, if required when qualification samples are available,
- Date, if required when final qualification data are available,
- Last date, if applicable, of manufacture of the unchanged product.

Where appropriate, the supplier may be asked to provide samples for HARMAN qualification. HARMAN Qualification requirements HARMAN Supplier Quality engineering, with input from Design Engineering, Program Management, Test Qualification, or the Purchasing/Procurement organizations as required.

9.3. Discontinuation of providing the OUTPUT

If OUTPUT intended for repeated delivery is to be discontinued, the SUPPLIER must inform HARMAN of such in writing as early as possible. The supplier shall provide information such as last time buy schedule and replacement recommendation.
The supplier shall provide failure analysis support for discontinued OUTPUTS to HARMAN.

10. Requalification of Product/Process at Suppliers

To ensure conformity to all specified requirements the SUPPLIER must conduct a regular requalification for the OUTPUTS that are intended for repeated delivery.

For OUTPUTS intended for repeated deliveries requalification planning shall be included in quality planning already.

The results of the requalification shall be documented. The results shall be submitted on demand to the responsible contact at HARMAN.

In addition to this requalification, additional or specific periodic validation may be required by HARMAN, HARMAN customers or for regulatory compliance purposes. In these cases, SUPPLIER shall comply with these requirements, as appropriate. HARMAN and HARMAN customer´s requirements will be provided to the SUPPLIERS specifically. Requirements that are related to regulatory compliance issues need to be determined by the SUPPLIERS themselves.

11. Supplier Performance Evaluation

HARMAN will perform frequent supplier evaluations. The target of the supplier evaluations is to identify and report good and bad supplier performances in Quality, Delivery, Cost and Technology/Engineering. It also creates opportunities for improvements to be more visible and transparent. The results of these evaluations will be reported internally at HARMAN and to the SUPPLIER. HARMAN will consider these results in the sourcing process and awarding of new business. SUPPLIER will be involved in defining expected measures that lead to continuous improvements.

12. Supplier Improvement Program - SIP

SIP is a HARMAN program used to improve the performance of the supply base in Quality, Delivery, Cost and/or Technology by utilizing audits, data analysis, and by driving systemic changes in areas/functions, where issues have been identified. The program addresses systemic issues and is driven by root cause analysis, supplier action plans, and aggressive deliverables and targets with consequences identified for failure to meet these targets.

During SIP, HARMAN is expecting:

- Leadership engagement, accountability, commits resources.
- Cross functional team approach.
- The supplier is recommended to perform an effective analysis of root cause using quality tools like 3 Leg 5 Why Method and/or Cause-Effect Analysis or other similar quality tools.
- Develop sufficiency plans to address the gaps.
- Develops a method to track implementation of the initiatives and resulting improvements.
- Implements a lesson learned process across their corporation using the Read across format or other similar tool(s).

13. Record Retention

All records related to definition and performance of the quality system as well as records created in connection with creating the OUTPUTS for HARMAN shall be maintained at the manufacturer or at other locations that are accessible to the responsible HARMAN upon request. The records shall be legible and shall be stored to prevent loss and minimize deterioration. Records stored in automated data processing systems shall be backed up.

Quality records for critical characteristics shall be retained for the length of at least 15 years after the discontinuation of delivery of the OUTPUT.

Quality requirement documents and quality records must be maintained for the length of at least 15 years after the discontinuation of the delivery of the OUTPUT to HARMAN for series and spare part demands.

14. Training

The SUPPLIER's personnel performing specific assigned tasks shall be qualified based on appropriate education training, and/or experience as required. Training records for all employees shall be maintained in accordance with a documented training procedure. Training effectiveness shall be practically reviewed by the supplier using various methods, such as pre-and post-testing and audits/appraisals of performance, as necessary.

Should quality assurance problems arise with fulfilling the requirement from this SQM or other Quality-standards, HARMAN may support the supplier regarding training or by referring him to training courses. HARMAN may also initiate training sessions for the SUPPLIER if he is unable to fulfil the requirements from this SQM.

15. Change History

Revision	Released	Modification Documentation
1st	29-Sep-2023	First revision **