Supplier Quality Requirements Manual
Introduction

Automotive market expectations for Quality, Cost, Service, Technology and Delivery require supreme business efficiency and resourcefulness for profitable growth and long term survival. MEI plans to maintain its business strength by working closely with its supply base to make sure that requirements and expectations are clearly understood and that its suppliers share and act with a common sense of urgency that our customers demand.

MEI Purchasing strategies address detailed supplier commodity strategies, cost reduction plans, innovative and efficient new program development and flawless product launch via robust Safe Launch Planning. Supplier performance will be closely monitored and supplier status will be results based.

To assist our suppliers in helping us achieve our strategies, MEI Purchasing will utilize the necessary Quality Product Engineering, Operations, Supplier Quality Assurance and Supplier Development Engineering personnel necessary to help both the supplier and MEI to be successful. We recognize that MEI cannot succeed without the superior quality, cost, service and technology offered by its supply base.

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Justin Reaume – Purchasing Director
Table of Contents

Section 1 – Introduction
1A. Policy and Vision
1B. Purpose
1C. Scope
1D. Responsibility
1E. Language
1F. Global Supplier Development Process
1G. Government Regulatory Compliance
1H. Environment Protection
1H.1 Environmental Guidelines
1H.2 Basic Requirements on the Environmental Compatibility of Products
1J. End-of Life Vehicle (ELV)/International Material Data System (IMDS) Reporting
1K. General
1L. Document Location

Section 2 - MEI Requirements
2A. Criteria for Selection as a MEI Supplier
  2A.1 ISO/TS 16949:2002 Registration
  2A.2 e-Business Capabilities
  2A.3 New Supplier/Location Qualification
  2A.4 New Supplier Assessment Criteria
2B. New Product Launch
  2B.1 Introduction
  2B.2 Advanced Product Quality Planning (APQP)
  2B.3 Packaging and Labeling
  2B.4 Production Part Approval Process (PPAP)
  2B.5 Lot Traceability
  2B.6 Special Characteristics
  2B.7 Prototype Fabrication, Quality Evaluation, Pre-Production Process Changes
2C. Serial Production Processes
  2C.1 Introduction
  2C.2 Supplier Request for Change
  2C.3 Concern Management
  2C.4 Supplier Audits
  2C.5 Sub-Supplier Management
  2C.6 Annual Revalidation
  2C.7 Supplier Facility Access
  2C.8 Contingency Plan
  2C.9 Document and Product Sample Retention
  2C.10 MEI Property - Tools
Section 1 – Introduction

1A. Policy and Vision

It is the policy of MEI to achieve a clear competitive advantage through continuous improvement in quality, cost, service, technology and delivery from our suppliers in the total supply chain. It is the expectation of MEI that suppliers shall:

- Flawlessly launch through the use of planning, preparing, and being trained to supply quality products and services.
- Maintain this flawless performance over time by protecting against change that would be detrimental to product quality and service by rapidly addressing all concerns and learning from mistakes so that they are not recurring in nature.
- Continually improve by proactively improving the quality and value of products and services over time.

1B. Purpose

The purpose of this Supplier Quality Requirements Manual (SQRM) is to specify MEI quality system requirements for our suppliers. These requirements extend from supplier qualification, to new product development, to serial production, and to service. It should be understood that the requirements noted within this SQRM reflect MEI requirements that shall be considered to be “Customer Specific Requirements” for the purposes of Quality System conformance and audit purposes.

1C. Scope

This manual applies to all direct material/service external suppliers. This manual applies to indirect material/service suppliers only when it is required by a MEI Purchase Order.
1D. Responsibility

Suppliers are responsible for meeting the requirements of this manual. Failure to meet these requirements may result in the loss of existing and/or future MEI business, in addition to reimbursement of the cost to MEI resulting from those failures. Suppliers shall ensure that their direct material/service suppliers comply with the requirements of ISO/TS 16949:2002. Suppliers shall adopt the standards of Zero Defects and 100% On Time Delivery to MEI. Suppliers shall understand that any established PPM target is not an Accepted Quality Level, but represents an intermediate continuous improvement step toward shipment of components/materials meeting the Zero Defects requirement.

1E. Language

MEI’s official language is English. All official communication with MEI will be done in English. Documents may display the native language when integrated in parallel translation. In this instance, the English is the only valid version.

1F. Supplier Development Process

The MEI Supplier Development team will follow a series of processes/procedures that have been defined as the MEI Supplier Development Processes. This details the methods and tools used by Supplier Development Engineering (SDE) and Supplier Quality Assurance (SOA) from the initial assessment at a potential new supplier through launch and into intensive supplier improvement and tactical monitoring within operations. The horizontal axis of the figure follows the product development stages, starting with Concept Validation.

Figure 1. Supplier Development Process

MEI’s product development process, initiates with the quoting process to our customers. Once a program is awarded, engineering works on concepts to meet the customers’ specifications and requirements. The process continues on thru validation of the design. Design Validation (DV) builds take place during this stage.

The next phase is the product and process development phase, PV. During this phase MEI facilities are installing the assembly equipment and engineering is working together with the customer to assure the product meets all performance and appearance, where applicable, requirements. During this stage, suppliers are developing their tooling and processes to provide material for future serial production. Also during this period, many suppliers will
be required to supply components/materials for equipment tryouts and product validation (PV) builds and testing. Supplier should also be constructing ramp-up plans to meet initial production requirements and creating contingency plans to address catastrophic events that would prevent the supply of materials under normal production conditions.

After the approval of the Production Part Approval Process (PPAP) package, and with the start of serial production, many suppliers shall participate in Safe Launch Planning at the direction of their assigned SDE. For a pre-determined period of time or number of components, the supplier and the receiving MEI facility will employ an expanded inspection process on key characteristics that will be typically designated as part of the design review process. The supplier shall continue to use the validated process once the program transitions from Launch into Production.

If changes to this process are desired, MEI’s approval is required; see the Magna Supplier Change Request (SCR) Process, QOP-0172 before implementing any changes to that initially validated process. After reviewing the definitions noted within QOP-0172 the supplier should contact their assigned SDE or buyer if any doubt lingers about requirements as it is far better to be safe as opposed to taking an unnecessary risk that may involve financial losses and needlessly jeopardize both the supplier’s relationship to MEI and MEI’s reputation in the industry.

Should the supplier’s performance not meet agreed upon goals and metrics during the serial production phase the supplier will be subject to one or more intensive improvement tools, such as on site quality reviews, quality reviews at MEI, Quality Improvement Process (QIP) or similar as determined by the MEI SDE.

1G. Government Regulatory Compliance

Suppliers shall comply with all applicable governmental regulations. These regulations relate to the health and safety of the workers, environment protection, toxic and hazardous materials, and free trade. Suppliers should recognize that the applicable government regulations might include those in the country of manufacture, as well the country of sale. Registration to ISO14001 is strongly recommended.

1H. Environment Protection

1H.1 Environmental Guidelines

MEI is convinced that the future and permanent protection of our environment, land, water and air can only be achieved through the joint efforts of Industry, Government and Society. Top priority will be to strive for continuous improvement in our environmental performance. We will strive through the development of new products, processes and working methods to further enhance our environmental performance. In doing this, we strive for economical use of raw materials, energy, water and other goods; and will fully consider the life cycle of our products through production, use and disposal. The environmental impact of our products during manufacturing covers both the manufacturing at MEI and those of our suppliers. This means that both, we and our suppliers, have to perform our activities such that the impact of those activities on the environment is reduced to a minimum. We therefore expect from our suppliers an active engagement in environmental concerns and the establishment, and adherence to, an environmental management program per ISO 14001 or other equivalent standard.

This does not release the supplier from complying with all relevant national and international regulations. The techniques and methods below are those that we believe to constitute the prerequisite to reach the above-mentioned environmental targets:

- Written guidelines regarding the environmental performance
- Regular review of production, maintenance, supply and disposal processes and products to determine their environmental impact
- An emergency plan
- Definition of targets to improve environmental protection and documentation of their fulfillment. This includes:
  - Safeguarding of resources (raw materials, energy, water)
  - Prevention and reduction of environmental pollution
  - Minimization of waste and rejects
  - Reduction of expendable packaging
  - Compliance with all automotive regulations regarding materials and substance
  - Have a recycling concept/program
1H.2 Basic Requirements on the Environment Compatibility of Products

The use and consumption of energy and raw materials should be managed effectively and with a minimum of logistics and transport over the entire vehicle/component life cycle. For a quantitative assessment of resource efficiency by way of life cycle analysis, the requisite data shall be provided upon request (material consumption, water consumption, total energy consumption, transport (raw materials), and emissions.

1J. End-of-Life Vehicle (ELV)/International Material Data System (IMDS) Reporting.

The End-of-Life Vehicle (ELV) Directive, 2000/53/EC, was enacted by the European Commission “to minimize the impact of end-of-life vehicles on the environment.” The use of lead, mercury, cadmium, and hexavalent chromium are prohibited in vehicles and their components, except for certain exemptions published in Annex II of the Directive. This is a mandated requirement for European Union (EU) Member States and also required by North American, and some Japanese, vehicle manufacturers. Additionally, other legal requirements, such as EU Directives 2002/95/EC, 2002/96/EC, and 2003/11/EC restrict the use of certain flame retardant substances: polybrominated biphenyls (PBBs) and polybrominated diphenyl ethers (PBDEs). PBBs or PBDEs shall not be present in components or materials supplied to MEI. Suppliers in all regions shall ensure that all components and materials supplied to any MEI facility comply with the above-mentioned legal requirements. MEI has developed new lead-free specifications to define the materials, processing and performance of lead-free components that are purchased for use in lead-free soldering environments (refer to MEI Lead-Free Performance Requirements). Suppliers of affected components shall meet the lead-free specifications. To ensure compliance with the various legal and customer requirements, MEI requires its suppliers to report information on materials within their respective components. The International Material Data System (IMDS) has been developed by vehicle manufacturers to collect and manage this data. Suppliers shall submit the required ELV/IMDS data to MEI as soon as possible upon award of new business, but in any case prior to the PPAP submission. The supplier as part of the PPAP submission shall provide confirmation to MEI's acceptance of the ELV/IMDS data. Refer to section 2B.3, Production Part Approval Process (PPAP) for further explanation of the submission requirements. MEI requires suppliers to submit ELV data by direct entry into IMDS via the Internet (www.mdsystem.com). There is also an IMDS Helpdesk that can be reached at 717-506-1461 that can help with any additional technical assistance.

1K. General

This manual is 'distributed' only via the posting on the MEI supplier portal at www.Magna.com. Printed copies are uncontrolled documents. While MEI will communicate to the suppliers major revisions to this manual, the suppliers are expected to remain up to date on MEI requirements by frequently visiting the MEI website. Visiting this website should become a business routine as MEI shifts to web based communications and applications. Questions regarding this manual should be directed to the MEI contacts listed on the MEI supplier portal.

1L. Document Location

Forms and documents referenced throughout this document can be found in the SQRM Documents Table.

Section 2 - MEI Requirements

MEI bases its supply management requirements on four key processes. These are:

1. The supplier selection process
2. New product launch
3. Continuous improvement
4. Supplier intensive improvement.

These key processes are global in nature, as are any of their referenced procedures. In some instances, because of unique system configurations, product lines and regions may have specific processes, procedures, and/or forms that may only pertain to conducting business with them. These unique requirements will be found in a table at the end of each section.

7 of 25
Magna Electronics SQRM Rev 2
2A. Criteria for Selection as a MEI Supplier

2A.1 ISO/TS 16949:2002 Registration

MEI's goal for all suppliers of materials and services affecting production material is to demonstrate compliance to ISO/TS 16949:2002. Suppliers shall also comply with MEI specific requirements defined in the Global Supplier Quality Manual (SQRM), found at www.Magna.com. Suppliers to MEI shall have a plan to achieve conformity to ISO/TS 16949:2002. Unless otherwise specified, conformity may be demonstrated by third party certification to ISO 9001:2000 (at minimum) or ISO/TS 16949:2002. This is consistent with the expectations of MEI’s customers and our business system that complies to ISO/TS 16949:2002 requirements. The scope of the requirement affects subassembly, sequencing, sorting, rework and calibration services in addition to direct material suppliers.

Note: QS-9000 or VDA certification does not replace the requirement to have a ISO/TS 16949:2002 conformity plan, nor does it replace certification to either ISO 9001:2000 or ISO/TS 16949:2002. MEI recommends for its suppliers to continue using the latest Automotive Industry Action Group (AIAG) versions of the Advanced Product Quality Planning and Control Plan (APQP), Potential Failure Mode and Effects Analysis (FMEA), Measurement System Analysis (MSA), Production Part Approval Process (PPAP), and Statistical Process Control (SPC) manuals as guidelines for their system development. For these publications, visit http://www.aiag.org>Products>Quality>Core Tools.

2A.2 e-Business Capabilities

Suppliers shall have fax, email, Internet access and Internet browser as a minimum for eBusiness capability. Suppliers are responsible for maintaining current key contact information to their respective buyers. These contacts include the top management representatives, and the required information includes phone numbers and email addresses. Additionally, suppliers shall, at minimum, maintain and update their certification status, once per year. Suppliers shall immediately communicate any change in certification or status to your respective Commodity Buyer and SDE. Certification status is also accessible to suppliers through their scorecard. The scorecard is updated monthly.

2A.3 New Supplier/Location Qualification

New suppliers who wish to be added, as a supplier, to MEI shall:

• Demonstrate compliance at a minimum to ISO9001: 2000. New suppliers, who have not completed their registration process, may be awarded business on the condition, unless otherwise specified by a customer to MEI, that they successfully pass the New Supplier Audit and have a reasonable plan to meet the SQRM and ISO/TS16949 requirements.
• Meet all commercial and financial requirements of the MEI purchasing group.
• Complete the Purchasing Audit Form [FCD-1206].
• Successfully pass a MEI New Supplier Audit, [FCD-0857], with a minimum score of 80%.

New locations for approved suppliers to MEI shall:

• Demonstrate compliance at a minimum to ISO9001:2000. Uncertified locations with more than 12 months of operation experience are eligible for certification to ISO/TS16949. Those facilities with less than 12 months of operation will need to contact their registrar regarding qualification for a Letter of Conformance.
• Complete the Purchasing Audit Form [FCD-1206].
• Successfully pass a MEI New Supplier Audit, [FCD-0857], with a minimum score of 80%.

Suppliers directed for use by MEI's customers shall meet the criteria defined by this document

2A.4 New Supplier Assessment [FCD-0857] Criteria

During supplier selection and assessment, MEI will perform various audits to confirm supplier capability, beyond the certification level. The primary focus areas are:

1. General Organization and Management Structure
2. Advanced Product Planning and PPAP
3. Product Realization, Measurement, Analysis & Improvement
4. Material, Facilities, Logistics & Tooling

Suppliers that initially do not score acceptably may be allowed to develop action plans and timelines to correct any deficiencies and then request a re-audit to verify implementation of these actions.
2B. New Product Launch (APQP)

2B.1 Introduction

New Product Launch initiates at design concept and runs through a production launch of a new component. When specified by the MEI SDE, suppliers shall use the MEI Supplier Development Management Process (Figure 1) when launching new product for MEI. MEI New Product Introduction teams will define component priority during the product development cycle. This designation determines the involvement of MEI Supplier Development in the APQP and launch process of suppliers. All suppliers, regardless of component priority, shall use a disciplined launch and APQP process.

2B.2 Advanced Product Quality Planning (APQP)

Suppliers should provide APQP status reports for a new product with regard to meeting the Program objectives of quality, cost, performance and timing. MEI will provide the format, frequency, and the required content of these reports. MEI prefers their suppliers use the forms included in this document, most of which can be found in the APQP Workbook, FCD-0880. Suppliers whose components/materials that MEI has designated as Category A shall use the MEI forms through this manual, and shall complete those forms in English. Suppliers providing Category B and C components/materials must also make sure all APQP and PPAP documentation is submitted in English, but can use an alternative format if approved by the MEI Supplier Development Engineer. Suppliers to MEI are responsible for managing their new product introduction process per the guidelines provided in this document. MEI's APQP process consists of four phases as shown below. Figure 3 shows the deliverables for the four phases.

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**Figure 2**

Magna Electronics (MEI) - 4 Phases of APQP for Supplier Development Engineering

<table>
<thead>
<tr>
<th>APQP ⇀ Phase 1</th>
<th>APQP ⇀ Phase 2</th>
<th>APQP ⇀ Phase 3</th>
<th>APQP ⇀ Phase 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplier Kick-Off and Planning</td>
<td>Product/Process Realization</td>
<td>Pre-PPAP</td>
<td>Product/Process Validation and Launch</td>
</tr>
<tr>
<td>Identify MEI and Supplier team, communications/responsibilities</td>
<td>Create and/or revise DFMEA as appropriate, depending upon design need</td>
<td>Pre-production run</td>
<td>Finalize complete PPAP submission package</td>
</tr>
<tr>
<td>Communicate and initiate Key Supplier Metrics</td>
<td>Develop process flow chart (diagram)</td>
<td>Process capability study</td>
<td>Cross-functional key metrics review: Launch signing unit</td>
</tr>
<tr>
<td>Initial Supplier Program plan and timing</td>
<td>Create 8 review preliminary process flow diagram, PFMEA, and Control Plan</td>
<td>Finalize PCM prepare for Safe Launch</td>
<td>Launch Readiness Audit</td>
</tr>
<tr>
<td>Conduct Cross-functional component design review (doc is located in GSQM)</td>
<td>Finalize PCM and use document for any pre-product part runs</td>
<td>Finalize PFMEA and Control Plan</td>
<td>Confirmation of full volume Run-At-Rate</td>
</tr>
<tr>
<td>Create preliminary Product Characterization Matrix (PCM) – Safe Launch Plan</td>
<td>Confirm tooling and gage construction progress</td>
<td>Review Supplier Ramp Plan</td>
<td>Finalize component packaging review</td>
</tr>
<tr>
<td>APQP Requirements</td>
<td>Develop Process Instructions</td>
<td>Launch Readiness Audit: document key metrics</td>
<td>Initiate Safe Launch practice; review supplier’s data for appropriate actions</td>
</tr>
<tr>
<td>Equipment Tooling &amp; gage concept/design review</td>
<td>Finalize Process capability study Plan</td>
<td>Re-quality equipment, tooling &amp; gaging as it moves between supplier site(s)</td>
<td>Review Key Supplier Metrics</td>
</tr>
<tr>
<td>Review MEI PPAP Requirements with the supplier (per MEI PPAP Checklist)</td>
<td>Validation review of “1st Off” tool/part conditions: Address any issues that can’t be contained w/in program timing</td>
<td>Appearance Approval (as appropriate)</td>
<td>Close-out previous phase open issues and key documents</td>
</tr>
<tr>
<td>Review supplier’s manufacturing feasibility document(s)</td>
<td>Floor plan layout</td>
<td>Supplier participates in Plant Readiness Review</td>
<td></td>
</tr>
<tr>
<td>Review preliminary capacity study &amp; initial supplier master schedule plan</td>
<td>Update previous phase open issues and key documents</td>
<td>Review status of Key Supplier Metrics</td>
<td></td>
</tr>
<tr>
<td>Initiate Open Issue Document</td>
<td>Update previous phase open issues and key documents</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Components Criticality Rating:

- MEI SDE will conduct APQP 1-4 w/supplier
- MEI SDE will conduct APQP 1 and 4 w/supplier
- PPAP only to SDE. Supplier is still responsible for maintaining APQP 1-4
This is the “Kick-off” phase. It begins once the supplier has been awarded new business. During this phase MEI and the supplier define the key milestones, review of the suppliers time line, conduct, when applicable, a detailed design review, and establish deliverables and expectations of the supplier for the given component and program. It is also inclusive of the span of time during which the supplier completes designs for their tooling, assembly lines and assembly cells, gauging and identifies additional capital equipment required to manufacture the component/material. This activity creates the foundation for the phases that follow.

This phase starts with the supplier’s direction to their manufacturers of the tooling, capital equipment, assembly cells and/or gauging to proceed and ends with the approval to ship the completed items. The supplier shall collect data required to ensure that the manufactured items meet drawing, specification and capacity requirements before approval to ship is given. See Figure 3 for further detail.

This is the Pre-PPAP or Pre-Validation phase. This phase starts with the delivery of the tooling, capital equipment, assembly equipment and/or gauging to the supplier’s facility. It ends with the completion of the PPAP production run. The critical activity in this phase is the first parts off review, by the supplier, and subsequent tuning of the process to produce components/material that conform to the drawings and specifications. See Figure 3 for further detail.

This phase is the Product and Process Validation and Launch stage of the process. During this period the supplier completes and submits a Production Product Approval Process (PPAP) package. A final review, for Category A components, requires the successful completion and sign-off of the PPAP Checklist and Key Metrics Report, found in the APQP Workbook, FCD-0880 for approval to ship.

As stated previously, regardless of component/material complexity, every supplier is expected to conduct and execute an APQP process. Suppliers who wish to use other reporting formats than defined in this document shall have written approval from their SDE. Manufacturing Feasibility Commitment Statements are required for every new or modified product design. Additionally, a Preliminary Capacity Study may be required for every new or modified product design or manufacturing process based on the nature of the engineering changes. These are completed, and submitted along with the Quotation.

1. **Supplier Feasibility Commitment Statement** – A document that confirms the supplier’s ability and commitment to meeting all specified design requirements.
2. **APQP Timeline** – a document that is used to track event timing to help insure on time PPAP submissions and successful launch.
3. **Key Metrics Report** – a document that the supplier will use to report on APQP progress via an agreed upon set of predefined metrics related to the APQP, PPAP, and Safe Launch Process.
4. **Supply Chain Map** – A pictographic layout of all the sub-tier contributors to any given component, or family of components, starting with the raw material supplier and ending with the MEI using plant(s). This document shall include services that directly affect the production material, including heat treat, plating or coating, secondary operations, 3rd party warehousing, etc. This document is a foundation to the Product Characteristic Matrix.
5. **The Product Characteristic Matrix (PCM)** - also known as the Safe Launch Plan is generated at the Design Review and is completed as the validation process progresses. This document also serves as the format for submitting Executive Summary process capability reports. (NOTE: For those components and materials that do not require a Design Review, the supplier shall use this document to submit process capability results in a summarized format as part of their PPAP package.) This document links designated and high Risk Priority Number (RPN) ranked features with the identified controls. It also drives the identification of sub-tier suppliers who have an impact on these features, documenting what controls they have established. Suppliers may use this document in support of the Pre-production Control Plan; assuring the product is manufactured under controlled conditions, and meets the drawing and specification requirements. This document is also used to formulate the Safe Launch Plan, when required.
6. **Safe Launch Plan** - (Dual Launch Netting, GP12, Pre-Launch Control Plan, etc.) - a joint effort between the supplier and MEI to have similar Pre-Launch Control Plans at both the shipping and receiving facilities. Safe Launch Plan requires the creation of a Pre-Launch Control Plan (PCM), an enhancement to the supplier's Production Control Plan. The implementation of an elevated, short-term Quality Inspection process is required. Safe Launch Plan plans will be documented using the Product Characteristics Matrix (PCM) and should be signed-off by the Supplier, the MEI SDE and the MEI SQA representative at the receiving facility. Suppliers will be required to submit data to the using plant(s) as part of this process. The exit criteria for the Safe Launch Plan (PCM) is shipment of zero defect parts that meet either the defined period of time or number of pieces. Any defect discovered during the SLP period restarts the event at “0” pieces shipped. Suppliers shipping parts under Safe Launch Plan shall create a separate label, placed on each container, showing “SLP” to indicating the nature of the parts. See Figure 3 for an example. The noted dimensions are approximate so long as the actual side reflects the intent. This label will be affixed near the identification label on the container.

7. **The Supplier APQP Progress Report** – This status overview is used to document planned completion dates for significant deliverables throughout the APQP process regardless of the component’s priority status.

8. **The Supplier APQP Open Issues Log** – Corrective Action Plan is the single form used document all open issues, and their respective corrective actions, that arise during the APQP process.

9. **APQP Tracking Report** – a supplier maintained document that summarizes the progress of key APQP deliverables for key events and multiple components. The responsible MEI SDE will notify suppliers when this form is required.

### 2B2.B Key MEI process external to the APQP Workbook

In addition to the forms included in the workbook there are three processes required by MEI.

1. **Supplier Component/Process Design Review** - a formal drawing and validation plan review involving an MEI cross-functional team and the supplier. This is a key event in the APQP process. Suppliers shall conduct an internal design review before attending any held by MEI. It is also beneficial for suppliers to invite representatives from their sub-tier suppliers to join their team for this meeting. The SDE shall generate an action plan based on the open issues discussed during the review and will be responsible for follow-up with all responsible parties to assure timely closure of those issues.

2. **Launch and Production Readiness Audit** - a score-based audit of the production process status and the supplier's plan to meet new production ramp-up. This score assesses the state of readiness of the supplier's process, and is a factor in the APQP Launch Summary Report.

3. **Supplier Run at Rate** - a formalized production capacity study that verifies proper cycle times, quality expectations and yields.

11 of 25
Magna Electronics SQRM Rev 2
2B.2.C  Process Flow Diagram
Shall define the entire process flow starting with Receiving Inspection and finishing with Packaging and Shipping. Shall include any sub-tier, or outside, suppliers, along with the names of those suppliers. Shall include machine numbers or unique identifiers that reflect what has been approved as part of the process. Suppliers shall identify those operations linked to the manufacturing of features identified by special characteristics.

2B.2.D  Process Potential Failure Modes & Effects Analysis (PFMEA)
Unless otherwise specified, suppliers shall use the AIAG Potential Failure Mode & Effects Analysis (PFMEA) manual as the basis for creating this document. The PFMEA shall follow flow established in Process Flow Diagram. Failure modes shall specifically address designated special characteristics from the MEI drawing in addition to the process and tooling based items. It is strongly recommended that suppliers consider the 8 most common errors for each process step including:

1. Too much (Excessive)
2. Too little (Omissive)
3. Missed/by-passed
4. Uneven – within part
5. Intermittent/Erratic application – part to part
6. Wrong type & Contamination
7. Too fast
8. Too slow

The PFMEA shall be used as a continuous improvement tool. Suppliers shall have a process in place to internally understand and react to their highest RPN numbers. This report may be in the form of a Pareto chart, displaying the RPNs from highest to lowest or a similar approach. This system shall include documentation of recommended actions and verification of their implementation. Suppliers shall be able to document continuous improvement efforts derived from RPN rankings below their target value for improvement actions.

2B.2.E  Control Plan (Quality Control Plan, Quality Plan)
The Control Plan shall appropriately reflect the same steps and flow established by the Process Flow diagram and PFMEA. The Control Plan shall include all features denoted in the Product Characteristic Matrix, characteristics and notes that are designated as special characteristics. The Control Plan shall include those features, characteristics and notes that are used to create the annual revalidation package. The control plan shall include the Safe Launch Plan controls, when used based on the Product Characteristic Matrix.

2B.3 Packaging and Labeling
MEI packaging and labeling requirements are delineated in QOP-0171. MEI and suppliers shall agree upon the packaging plan during APQP, including the following requirements. There shall be only one part number in a box or packaging unit. All packaging units shall be labeled and the label shall include:

- MEI part number with engineering level and part description.
- Quantity.
- Supplier name and MEI supplier code.
- Lot traceability number and date -- this number shall have a direct relationship with Delivery Note supplied. Starting with the Delivery Note, the supplier shall be able to trace all the documents and record. MEI, at its discretion, may specify additional traceability requirements.
- Raw material Heat number, if requested.
- A Bar Coded label applied to each packaging unit. MEI facilities may specify their own bar coding formats. Suppliers shall meet the bar code requirements of the MEI location they are shipping to. Suppliers, regardless of the manufacturing location, shipping to MEI's North American facilities shall meet the requirements found in the North American Labeling Requirements.

Suppliers providing product to multiple operating units, on a global scale, shall work with each of the locations to assure that the packaging is sufficiently robust to withstand shipment by sea and arrive on time, without damage. MEI expects their suppliers to conduct, periodically, dock audits on packaged materials. Evidence of these audits shall be retained with other lot inspection documentation.

2B.4 Production Part Approval Process (PPAP)
Suppliers shall ensure that the PPAP document and sample submissions are in accordance with the requirements of the Automotive Industry Action Group (AIAG) PPAP Manual. Suppliers should also strictly adhere to the PPAP submission guidelines described in the MEI PPAP Checklist that is included as a specific tab within the MEI APQP Workbook. Suppliers shall only submit PPAP packages for production-released drawings, and a copy of this drawing shall be included in the submission package. Each supplier is responsible for meeting all these requirements before submission to MEI, including obtaining MEI approvals for any change requests.

Suppliers may be requested to submit the PPAP package in an electronic format by one or more of the product lines and regions. In these instances, suppliers must be prepared to comply with these requests. MEI has established a global PPAP validation requirement that further defines submission levels, including what the supplier submits and/or retains (see Figure 8). The order that the package is to be organized is indicated in the MEI Number column. Suppliers should use the forms identified in the AIAG PPAP manual. Suppliers may use their forms only if they are equivalent to the AIAG forms and if they have the written approval of the MEI SDE. MEI may require their suppliers to submit a validation package that contains additional documents and forms beyond those required by AIAG. In addition, the supplier is responsible for all sub-tier PPAP submissions and approvals, including those suppliers MEI has directed for use. A PPAP Checklist is available for suppliers to use; assuring that the submission meets MEI’s expectations.

For all new components and materials, suppliers shall submit with the validation package a copy of ELV/IMDS Approval document. This form verifies the submission of End-of-Life Vehicle component content. Based on the absence of this document, MEI will not approve the PPAP submission.

Suppliers of plastic components to MEI are required to comply with regrind levels specified on the component’s drawing. Components produced throughout the APQP process, including DV, PV, and PPAP, shall be representative of the maximum allowable regrind, and is confirmed by certified laboratory analysis. Additionally, suppliers are responsible to assure that the component’s PFMEA and Control Plan specifically address, and control, this requirement (handling of the use of regrind).

Supplier submission of a non-conforming PPAP package may be recorded as a supplier performance failure and could affect the supplier’s performance rating. MEI will determine the Level of PPAP submission, and any special requirements if applicable. When applicable, suppliers shall include in the PPAP submission the Engineering Specification (ES) test plan and the ES test results. An approved/accredited laboratory shall conduct the ES tests. Note: standard catalog purchased components, i.e., diodes, resistors, etc., that do not go through the PPAP process, based on a product line decision, are to be considered as approved components.
2B.5 Lot Traceability

All suppliers to MEI shall have an effective lot definition and traceability procedure. The shipper number will be linked to the lot traceability procedure in such a way that the delivered product can be traced back to the raw material. Unless otherwise approved in writing by the MEI Supplier Development Engineer, a lot shall consist of one shift, or eight hours of production, whichever is smaller. For Bulk Processes, lot size may be defined by quantity and vary based on process/production equipment. MEI reserves the right to specify a maximum batch size. Each lot shall be traceable back to the raw material used. The lot definition shall reflect all significant processes influencing the component/material, with the shipping lot number reflecting the last value added operation. Suppliers shall ensure that their lot traceability system maintains its integrity throughout the extended supply chain, including not only raw material, but also purchased components/products. Many components' lifeline begins and ends within the facility of the supplier. However, there are those components that do require processing by outside companies to finish the process stream. These may include heat treat, coining, grinding, coating, and other various processes. If the original lot were batch processed through the different secondary processes, then there would be no need to change the original lot number. However, if the batches are split at a secondary processor, then the lot number for each of the batches should be unique. Once manufacturing/assembly begins, a lot number is changed if:

- One shift of production or eight hours is reached.
- The lot number changes on the raw material being used.
- When the components undergo another value added process and the original lot is divided during processing.
- The lot number changes on any one of the components being used.

When required the supplier may need:

- To implement Serialized (maintains a one-to-one relationship between the finished good serial number and the components' serial number) lot traceability, or
Specific Lot (maintains a one-to-one relationship between the finished good serial number and the components’ lot numbers) traceability for certain programs. To clarify the difference between this and general traceability, consider a supplier who molds a given component. After molding, two rivets are pressed into the molded part. General traceability is where there is no lot traceability between the molded component and the assembled parts. Specific traceability would be where the lot numbers of the assembled components are traceable through the lot number of the stamped component. For safety/critical parts, the required retention time for Lot Traceability records shall be found in Section 2C.8.

2B.6 Special Characteristics
At a minimum, suppliers shall implement process controls for Special Characteristics as designated on MEI drawings. Additional characteristics deemed germane to be ‘predictors of process stability and feedback should also be identified in the supplier’s Control Plan. These relate to product safety, government regulation, product performance, and the ability to assemble product or customer satisfaction features. These are identified by various symbols, requiring specific levels of special controls and process capability.

The supplier must calculate and report the process capability as Ppk. For those characteristics/features showing a Ppk of less than 1.67, the supplier must create an action plan that defines both containment and process improvements. Process capability can be conducted with both variable and attribute data. The minimum acceptable sample size for variable data is 100 pieces, and for attribute is 300 pieces, unless a sample size exception is approved by the respective MEI SDE/SQE. Containment must effectively separate non-conforming material from the population. Containment, generally either 100% sort or some form of mistake proofing, must continue until such time that the process Cpk demonstrates capability greater than, or equal to, 1.33, unless specified by a product line designation.

2B.7 Prototype Fabrication, Quality Evaluation, Pre-Production Process Changes
For the fabrication of prototype or pre-production parts, suppliers shall imitate the planned production process as closely as feasible. For these prototypes, MEI may require that the suppliers provide material, dimensional, performance, or process data. If the prototype and production suppliers are different, the prototype supplier shall share with the production supplier the process knowledge gathered in prototype fabrication. Proprietary information may be withheld by prior agreement with MEI. Once a supplier starts providing parts, as part of the process development and validation stage, any changes to the process require notification to MEI of those changes. These changes may include:

1. To outside or sub-tier suppliers,
2. Addition/deletion of capital equipment,
3. Tooling and/or gages,
4. To manufacturing methodology, and
5. To internal secondary processing.

Suppliers of proto-type parts, when required, shall respond to material concerns and requests for Corrective Action.

2C. Serial Production Processes

2C.1 Introduction
Once the manufacturing process for producing a component is successfully validated, the next phase encountered is that of serial production. During this stage there are a number of requirements each supplier should be fully aware of and follow. Key areas include change management, concern management, sub-tier supplier management and annual revalidation. Additional expectations are also detailed in the following sections.

2C.2 Supplier Request for Change (SCR)
Suppliers shall submit a written request for product or process change and obtain MEI approval prior to implementing the change. The procedure and form that defines the SCR submissions and approval process is [QOP-0172]. This includes changes at Sub-suppliers throughout the supply chain. In general, suppliers shall submit a written request for all items listed in Table I.3.3 of the AIAG PPAP Manual. Suppliers are also required to submit all supporting validation data including necessary dimensional reports, performance testing, before/after process parameters, updated APQP documentation (PFMEA/Control Plan) and a detailed timeline demonstrating proper change control that identifies necessary safety stock/bank requirements including timing for MEI/Customer validation timing and designated resources to manage the change. MEI must act in accordance with ALL customer requirements for change notification and as such, MEI expects the supply base to comply correspondingly. Change approval may take an extended period when MEI customer approval is required. Changes shall not be implemented prior to the receipt of written approval from MEI. VERBAL REQUESTS WILL NOT BE ACCEPTED.
Below are the defined notification requirements, similar to Table I.3.1 of AIAG 3rd edition PPAP Manual:

1. Use of other construction or material than was used in the previously approved part or product
2. Production from new or modified tools (except perishable tools), dies, molds, patterns, etc., including additional or replacement tooling
3. Production following refurbishment or rearrangement of existing tooling or equipment
4. Production from tooling and equipment transferred to a different plant location or from an additional plant location or supplier plant location.
5. Change of subcontractor for parts, non-equivalent materials, or services (e.g. Heat Treating, Plating, protective or functional coatings) that affect MEI or OEM fit, form, function, durability, or performance requirements.

 Suppliers ARE responsible to communicate and obtain approval for all tiers of supply chain within the manufacturing process!

6. Product produced after the tooling has been inactive for volume production for twelve months or more.
7. Product and process changes related to components of the production product manufactured internally or manufactured by subcontractors that impact fit, form, function, performance, and/or durability of the salable product. Additionally, the supplier shall concur with any requests by a subcontractor before submission to MEI and its respective customer base.
8. For bulk materials only:
   a) New source of raw material with special characteristics from new or existing subcontractor. Change in product appearance attributes where there is no appearance specification.
   b) Revised parameters in the same process (outside PFMEA parameters of the approved product, includes packaging)
   c) Change outside of DFMEA (product composition, ingredient levels) of the approved product.
9. Change in test/inspection method – new technique (no effect on acceptance criteria)

Consequences of non-communicated or unauthorized process changes at the supplier manufacturing facility or any sub-supplier facility could result in any or all of following actions:

1. Written notification from MEI to supplier requesting the supplier to contact their registrar of the non-conformance.
2. Supplier commercial status change to New Business Hold (NBH) or Bid Suspension for a period of 3 – 6 months, depending on root cause of non-conformance, Issuance of Critical A concern and immediate third party containment of affected component/product,
3. Potential request for independent, third party audit of affected supply chain, including ALL affected sub-tier suppliers involved.

Reinstatement of supplier to ‘Good Standing’ will depend on suppliers’ ability to develop effective preventative actions and subsequent verification by MEI accordingly.

Authorization to ship production material after the change is communicated through a signed Part Submission Warrant after MEI has approved the PPAP for the requested change, and that change is coordinated through the using MEI facility or facilities.

Off-Line rework, not included in the original Control Plan, is considered a process change and suppliers shall obtain MEI approval for it as specified above. Rework shall be supported by operating and inspection instructions.

The inspection instructions shall be consistent with an updated production process control plan. MEI will require special identification and segregation of the reworked product.

Suppliers shall request, in writing, a deviation (or concession) before shipping non-conforming material to MEI. A plan to return to normal production and the time required to do so shall be submitted at same time as the written request. Material shipped under an approved deviation shall be labeled with the Deviation Number and its expiration date.
2C.3 Concern Management (Corrective Action)

A. Upon receiving a MEI concern for quality or delivery, suppliers shall:

1. Implement a containment action within 24 hours or as directed by the MEI SDE/SQE.
2. Within 10 working days, unless otherwise specified, the suppliers shall submit a corrective action plan or a reasonable approach to developing one in case of complex issues.
3. These targets are standard, but the concern creator can establish other target dates, if needed. Suppliers shall use a systematic problem solving method such as 8D, 5 Phase, 7-Step, etc. Concern issuance, response and tracking are all online, and the suppliers shall participate in the MEI online system once available.

B. Suppliers shall immediately notify MEI upon discovery that they might have shipped nonconforming or suspect product to MEI. Notification shall go to the Quality Manager and the Materials Manager, or in their absence, the Operations Manager of the MEI facility. The suppliers shall notify all MEI facilities receiving the same or similar affected product.

C. Suppliers are responsible for all costs and expenses created by any defect on the material supplied and MEI will recover these costs from the responsible supplier per the MEI Supplier Chargeback procedure (NCMD Worksheet) procedure, [WI-0874].

D. The Materials Rejection Reports process involves five procedures:

1. MEI - Identification and definition of problem
2. MEI - Reporting and notification process
3. Supplier - Response and corrective action
4. MEI - PPM defects and rate of occurrence
5. MEI - Supplier Charge backs for quality related expenses

Each step lists required and recommended elements for each procedure. Unless otherwise noted, the procedures that follow will be used by MEI. Suppliers are obligatory to use or develop their own systems that comply with MEI's materials rejection reports and corrective actions procedures.

1. **MEI - Identification and Definition of Problem**
   
   **Required Procedures**
   
   - Will contain sufficient information to ensure understanding by the supplier of the problem
   - Will contain sufficient information to ensure proper and quick containment by supplier and user plant (Information may include lot number, traceability or quantity)
   - Will have representative samples available for review and supplier evaluation.
   - Will have defined severity and/or classification of problems
   - Will contain quantitative information to define the extent of the problem
   - Will have a method to distinguish “fit and function” (critical) issues from “nonfunctional” (nuisance) issues.
2. **MEI - Reporting and notification Process**

**Required Procedures**
- Will include proper identification and definition of problem
- Will use a Concern Tracking Matrix/log for reporting and status tracking
- Will have established time frame for reporting and notification
- Will include initiator or contact person at the issuing plant
- Will ensure supplier acknowledgment of receipt of notice or report.
- Will identify status of material and current disposition
- Will request a return material authorization (RMA)

**Recommended Procedures**
- Should identify status of material and current disposition
- Should include request for return material authorization (RMA)

3. **Supplier - Response and Corrective Action**

**Required Procedures**
- Will have well-defined procedure for corrective action and response
- Will have well-defined time frame for corrective action and response
- Will have formal approval, closure and tracking process
- Will require 8D Process or a similar problem-resolution process for documenting and verifying corrective action
- Will utilize Concern Tracking Matrix/log for tracking and maintaining corrective action and response
- Will define specific steps for disposition of material
- Will have a process for rescinding invalid corrective action requests, which are not needed or were generated in error by MEI

**Recommended Procedures**
- Should have method or process for rescinding invalid or incorrect corrective action requests where 8D or a similar problem resolution process is not needed or error was made by initiator.

4. **MEI - PPM Defective and Rate of Occurrence.**

**Required Procedures**
- MEI will have well-defined procedure for MEI to adjust PPM to verified parts defective.
- The supplier must acknowledging receipt of returned parts within the time frame dictated by the user plant.
- The Supplier, within a the time frame dictated by the user plant, as part of the 8D or a similar problem-resolution process must supply to user plant a minimum of the following information:
  - Segregation/containment actions 1) Sort results 2) Rework plan 3) Interim actions 4) Root causes
- PPM will include the following:
  - Quantity of VERIFIED nonconforming production parts,
  - Quantity reworked (on-site or off-site) and used, and
- Initial PPM will include total quantity of suspect parts returned to supplier. This amount will be adjusted later to reflect actual defect quantity if all adjustment policy criteria are met.

**PPM will not** include the following:
- Part that have not been PPAP approved and prototypes,
- Parts used under authorized deviation,
- Warranty returns, and
- Parts “used as is.”

**Bulk Rejections** - For example: labeling, plastic resin, steel, etc...
- First occurrence - bulk rejection shall be counted as 1 quantity nonconforming accompanied by a well-documented QCCAR.
- Second occurrence - bulk rejection Actual number of defects NOT rejects shall be included in PPM calculation and supplier to be placed on Controlled Shipping Level I.
- Third occurrence - bulk rejection, all parts shall be counted against the supplier, included in the PPM calculation, and the supplier placed on Controlled Shipping Level II.
5. MEI Procedure for Supplier Chargebacks for Quality-Related Expenses

Required Procedures
Will have well-defined procedure capturing all associated costs for defective material and related expenses using MEI standard form
Will include detailed explanation of components for the charges, including hours, rework, cause and cost
Will be traceable to applicable Concern and RMA report
Will have well-defined authorization and review levels and will be cross-functional including the following company disciplines: quality, purchasing, finance and plant management.
Will include detailed scope and timing
Will capture all associated costs.

2C.4 Supplier Audits

MEI employs a number of audit tools in its Supplier Development Process. This starts with the assessment of a potential new supplier who desires to enter a business relationship with MEI to 2nd Party compliance audits to the latest version of ISO/TS 16949. See Figure 7.

The Audit Hierarchy:
B. New Supplier Assessment - An audit conducted with a potential supplier
C. Launch Readiness Audit – An audit conducted to assess a supplier’s readiness for flawless launch
D. Part and Process Audit – An audit conducted to assess a supplier’s process and quality system specific to a mature part

MEI Audit Hierarchy
A. Any supplier of production material to MEI may be requested to participate in one, or more, of the audit types defined in Figure 7.
B. When notified of a future scheduled audit the supplier, to best prepare, should conduct an internal audit before the MEI audit team arrives.
C. MEI may, at its discretion, utilize independent auditors. These individuals represent MEI and will audit the supplier’s processes to establish conformance to validated quality systems.

![Figure 7](attachment://image.png)
2C.5 Sub-Supplier Management
Suppliers of MEI shall have capabilities to manage their respective suppliers (regardless of how directed) including APQP disciplines, supplier scoring/rating and as appropriate periodic auditing. MEI, when it deems necessary, will audit the critical processes of the sub-tier suppliers to assure that proper controls are in place throughout the entire supply stream. Suppliers of MEI shall ensure they audit and manage critical processes such as heat-treating and plating and, when directed, use the designated AIAG CQI format(s).

Sub-tier suppliers have a tremendous impact on the quality of the final component. Whether they provide raw materials, services or sub-components their influence is so profound that it is critical for each of MEI’s suppliers to have a supplier management system in place. This system shall include a function that tracks and reports on their supply base quality and delivery performance. Supplier shall be able to demonstrate that they manage their suppliers’ issues through documented corrective actions and verification activities.

2C.6 Annual Revalidation
Unless otherwise specified, a complete annual layout inspection, including all sub-components, is required for all parts. All suppliers shall annually revalidate their respective production components, and be able to provide the results to MEI within 48 hours of the request. Suppliers shall compile revalidations and document this requirement in the Production Control Plan for all parts supplied regardless of the product line/region. Those features/characteristics/notes that will be part of the revalidation package need to be designated such at the time of initial PPAP, but at a minimum shall also include a PSW and valid material certification report(s) not more than 12 months old, a full dimensional report, and a capability study for all print designated special characteristics.

2C.7 Supplier Facility Access
By prior notice, suppliers shall allow MEI and MEI customers’ access to both their facilities and those of their suppliers, for the purpose of evaluating parts, processes, documents (i.e., FMEA, Control Plan, Instructions, records...), methodologies and systems used in manufacturing of MEI products. MEI may, at its discretion, use 3rd Party independent auditors. These individuals represent MEI and will audit the supplier's processes to establish conformance to validated quality systems.

2C.8 Contingency Plan
Suppliers shall develop a contingency plan for potential catastrophes disrupting product flow to MEI, and advise MEI immediately (within hours - not days) in the event of an actual disaster. In an actual catastrophe, suppliers shall provide MEI access to MEI's tools and/or their replacements.

2C.9 Document and Product Sample Retention
Suppliers shall retain documents and product samples for the time the part is active (a part is active as long as it is being supplied to the customer for original or service applications) in production plus a minimum period of 15 years. Parts used on multiple programs may require an exceptionally long retention period. The supplier shall retain a master sample from each cavity, die, and pattern for the length of time that the component/material is active plus one year. The master sample shall be identified as such and shall show PPAP submission reference and MEI approval date.

2C.10 MEI Property – Tools
All tools, manufacturing, test or inspection equipment belonging to MEI, or their customers, will be permanently marked to clearly show that they are Property of MEI (ISO/TS 16949:2002.4.1), or the customer. These tools will only be used for MEI products unless an authorization in writing exists. Contact your buyer concerning questions and information regarding this subject.

2D. Continuous Improvement

2D.1 Introduction
MEI considers supplier continuous improvement to be an integral part of the overall quality management system continuous improvement process. At a minimum Suppliers should develop and present plans that improve internal systems that address and support flawlessly launching of new products/components/sub-systems, value enhancements and cost competitiveness, and achievement of agreed upon quality targets, with a plan to achieve zero defects in support of on-going operational excellence. These plans should be presented at least quarterly during the MEI Quarterly Business Review process scheduled by the MEI Commodity Buyer. This plan should include Lessons Learned from previous launch, cost and quality issues, and how these lessons have been incorporated into respective continuous improvement projects. Suppliers should also be prepared to discuss their intent to maintain (or achieve) strategic status. MEI recommends suppliers use the fundamentals outlined in ISO/TS 16949:2002 as a platform for organizing continuous improvement plans, especially the use of the DFMEA and PFMEA as tools for targeted risk reduction and process and product improvement activities.

20 of 25
Magna Electronics SQRM Rev 2
2D.2 Supplier Performance Reporting

Purpose
The MEI Supplier Performance Rating System (SPRS) is a means to help communicate our expectations to the supply base. Suppliers are expected to use this tool to help identify opportunities for continuous improvement in the areas of quality, cost, delivery and service. Internally, these measures provide valuable data to assist MEI Purchasing in sourcing decisions. Suppliers should access this tool at sprs.magnadon.com. Be aware that this tool is shared with our sister company Magna Mirrors.

Scope
All production suppliers to MEI production facilities are expected to access monthly. The system provides data by Magna Electronics plant as well as a roll-up of all reporting Magna Electronics facilities.

Each Section can score a possible 100 points. The grand total will be a weighted average of the four sections. Scoring criteria are defined below for the Quality Section – please see your buyer for the criteria in the other sections.

Elements

Quality Section - The Quality Rating section includes rating criteria in four specific areas: PPM Performance, SCAR Performance, PPAP Performance, and Quality System Status

1. PPM Performance (40 Points) – This sub-section is split into 2 categories: Performance against a Purchase Statistic Group 6-month average and performance against the Supply Base Goal.

A. A Purchase Statistic Group (PSG) is a commodity-type classification used at Magna Electronics to group similar parts and processes of purchased material. The PSG points are awarded based on 6-month rolling PPM performance better than or worse than the supply base 6-month average for the statistics group. Each supplier starts with a baseline of 20 points. The points are adjusted up or down based on performance against the PSG 6-month PPM for the period. The formula used to calculate the percentages listed below are as follows:

If supplier’s 6-month PPM is less than 6-month ave: percentage = [(6-month ave/actual) – 1]*100
If supplier’s 6-month PPM is greater than 6-month ave: percentage = [1-(actual/6-month ave)]*100

Performance against PSG 6-month ave. Scoring Criteria – 20 pts possible

100% of PSG 6-month ave. or better = +20 pts (40 total)
Example: 6-month ave. =100 PPM, 6-month act. PPM is 50 or less

51-99% better than PSG 6-month ave. = +15 pts (35 total)
Example: 6-month ave. =100 PPM, actual PPM is 51-66

26-50% better than PSG 6-month ave = +10 pts (30 total)
Example: 6-month ave. =100 PPM, actual PPM is 67-79

11-25% of PSG 6-month ave. or better = +5 pts
Example: 6-month ave. =100 PPM, achieved PPM is 80-90

0-10% better than PSG 6-month ave = 0 pts (20 total)
Example: 6-month ave. =100 PPM, actual PPM is 91-100

1-10% worse than PSG 6-month ave = -10 pts (10 total)
Example: 6-month ave. =100 PPM, actual PPM is 101-110

11-25% worse than PSG 6-month ave = -15 pts (5 total)
Example: 6-month ave. =100 PPM, actual PPM is 111-125

26-50% worse than PSG 6-month ave = -20 pts (0 total)
Example: 6-month ave. =100 PPM, actual PPM is 126-150

51-99% worse than PSG 6-month ave = -25 pts (-5 points total)
Example: 6-month ave. =100 PPM, actual PPM is 151-199

100% + worse than PSG 6-month ave = -30 pts (-10 points total)
Example: 6-month ave. =100 PPM, actual PPM is 200 or more

Note: if a supplier sells material in more than one PSG, the scoring will be done against the PSG with the greatest volume in terms of units received at Magna Electronics for the 6 months.

21 of 25
Magna Electronics SQRM Rev 2
B. The Supply Base goal is common for all suppliers and reflects the Magna Electronics expectation of 10 PPM to achieve full credit for points. The supplier’s rolling 6-month PPM is used for comparison to the criteria listed below.

Supply Base Goal Scoring Criteria – 20 pts possible
- 0-10 PPM = 20 pts
- 11-50 PPM = 15 pts
- 51-100 PPM = 10 pts
- 101-200 PPM = 0 pts
- Greater than 200 PPM = 0 pts

2. SCAR Performance (20 points) – This sub-section rates the ability of the supplier to respond to quality defects and permanently eliminate them from future occurrences. It is split into 2 categories: On-Time Percent and Critical Quality Issues.

SCAR Scoring Criteria
- Timeliness (On-Time %) – 20 pts possible
  - 100% On-Time Response Rate = 20 pts
  - 75-99% On-Time Rate = 10 pts
  - Less than 75% On-Time Rate = 0 pts

Additional deductions for Critical Quality Occurrences:
- SCAR issued for Magna Electronics Customer Complaint = minus 10 pts per occurrence
- Repeat SCAR = minus 5 pts per occurrence

3. PPAP Performance (20 points) – This sub-section rates the suppliers ability to submit a defect-free PPAP to Magna Electronics. The rating evaluates all PPAP submissions for the previous 12-month period. If no PPAP submissions have been made the default is 20 pts.

PPAP Scoring Criteria
- 100% PPAP Submissions Approved – 20 pts
- Each Limited Approval = -3 pt deduction
- Each Rejection = -5 pt deduction

4. Quality System Status (20 points) – This section rates the current quality system status for the supplier. The rating is assigned by the SDE responsible for the commodity. It is an “overall” rating and therefore does not have a monthly calculation. The rating is based on supplier compliance to TS16949 and ISO9000 requirements coupled with acceptable quality performance in products supplied to Magna Electronics facilities. Evidence of Quality Management System certifications and plans are to be posted on the MEI supplier portal in the “certifications” section.
Quality System Status Scoring Criteria

Magna Electronics Approved Quality System – 20 pts
Supplier is TS16949 registered or ISO9001:2000 registered by an accredited 3rd party and plans are on-track to be compliant to TS16949:2002

Magna Electronics Provisional Approval – 10 pts
Supplier is ISO9001:2000 registered but missing TS16949:2002 compliance plans or plans are not followed. Performance levels are acceptable in SPRS Quality section on a consistent basis.

Unapproved Quality System – 0 pts

Contact your Commodity Buyer to identify opportunities that would allow your organization to be awarded an upgraded supplier status.

Security
Suppliers are provided with a log-in password to allow access into the MEI SPRS system. Passwords may be obtained through the Purchasing Department.

Figure 6: Example of SPRS screen

23 of 25
Magna Electronics SQRM Rev 2
2D.3 Intensive Improvement Process

The Intensive Improvement process involves four steps (see Figure 13). It starts with one of the MEI facilities writing a complaint against a supplier for a quality performance issue. The corrective action process can escalate from a written corrective action to certified stock, or controlled shipping, to the intensive Top Focus improvement process (see Figure 8 below).

Figure 8

Chronic Offender - Top Focus Program
- Tactical concern specific CA
- Systemic CA
- Stepped metric improvements
- Controlled Shipping

Successful Top Focus
Graduation
Continued Chronic Concerns
Desource

2D.4 Controlled Shipping

Controlled Shipping (CS) Level I and Controlled Shipping Level II will be levied against the supplier when the MEI plant has determined that the supplier does not have the necessary safeguards preventing non-conforming products from reaching MEI manufacturing location or its customers.

Controlled Shipping (CS), Level I initiated by MEI and performed at the supplier location by supplier employees. Controlled Shipping Inspection process must be performed in a controlled area of the plant. Secondary Inspection data must be collected, and inspected product must be certified and data provided to MEI receiving plant.

Controlled Shipping (CS), Level II includes all of Level I, with an added inspection by a MEI approved 3rd party. Third party is selected by the supplier and approved by MEI, and paid by the Supplier. In some instances MEI may require that the 3rd party inspection to be performed outside the supplier facility.

Based on the severity of the incident, MEI may elect to go directly to CSII. MEI SQA will review irreversible corrective action and authorize removal or renewal of Controlled Shipping when appropriate, normally per the exit criteria noted in the CSII induction letter. A record of CS incidents will be maintained for 12 month period on the Supplier Scorecard. For details of the CS program see QOP-0173

2D.5 Cost Recovery

Supplier Cost Recovery (CR) will be initiated by MEI when it has been determined that the supplier is responsible for quality and or delivery shortcomings. Cost Recovery will be communicated using the MEI NCMD process. Cost Recovery process will include, but is not limited to: contaminated stock at MEI plant, product in transit, OEM assembly plant, non-conforming received goods, assembly line downtime due to delivery or quality related issues, and warranty returns. Cost Recovery Concerns will be a significant factor in MEI sourcing decisions.

GLOSSARY

Definitions
1. APQP - Advanced Product Quality Planning. A structure activity that plans, tracks and reports the development of a process to manufacture a component/material/assembly to meet customer requirements.
3. ASN - Advance Shipping Notice
4. Cpk 1.33 - The capability index for a stable process.
5. CR - Cost Recovery. Similar to Supplier Chargeback and NCMD
6. CS - Controlled Shipping.
7. DFMEA - Design Failure Modes Effect Analysis. A document generated during the design phase that identifies and establishes controls for potential failures in a component/material/assembly.
8. DV - Design Validation. Testing that assures that a component/material/assembly meets the users' requirements.
9. ELV/IMDS - End-of-Vehicle-Life/International Materials Data System. ELV is a regulatory requirement to eliminate hazardous materials from current production components. IMDS is the data system used to collect and report on the materials that make up components and assemblies.
10. LRA - Launch Readiness Audit. An audit conducted one or more times throughout the APQP process to determine a supplier's state of readiness to start serial production.
11. OEM - Original Equipment Manufacturer. Applies to automotive corporations, i.e., BMW, Ford, Daimler-Chrysler, GM, Volkswagen, etc.
12. PFMEA - Process Failure Modes Effects Analysis. A team process that identifies and controls potential failures before the product goes into production.
14. Ppk - The performance index of a process. Normally used as part of the PPAP process and should be > 1.67.
15. PV - Production Validation. Testing that assures that the manufacturing process produces product that meets the customers requirements.
16. SCAR – Supplier Corrective Action Request
17. Shall - Use of the word "shall" indicates a mandatory requirement(s).
18. Should - Use of the word "should" indicates a recommended requirement(s).
19. SLP - Safe Launch Plan. A supplier's plan to provide increased assurance for products covered by Dual Launch Netting (DLN). This plan is documented on either the Product Characteristics Matrix (PCM), or the Pre-Launch Control Plan
20. SDE - Supplier Development Engineer. A quality engineer who is primarily responsible for APQP activity and development of a supplier’s systems.
21. SQE - Supplier Quality Engineer. A quality engineer who is primarily responsible for suppliers' quality after the start of production.
22. TF - Top Focus. A supplier intensive improvement tool used by SDE on behalf of the MEI Purchasing Organization to improve the performance of habitually poor performing suppliers.