Revisions

n°	*Ref.*	*Description:*
00	Whole doc.	Issue; date 16.11.2015
01	Par. 8	Revision of timing for 8D report management.

SUMMARY

1. PURPOSE

This is a formal joint agreement on quality responsibilities and activities to ensure a clear understanding between Barnem and you the supplier of our respective quality obligations.

2. QUALITY SYSTEM

The quality system of Supplier has to be certified to IATF 16949, by an external certified body. Supplier must provide copy of certifications and each extension, suspension or removal.
In case of companies not subjected to IATF 16949, ISO 9001 certification is the minimum accepted requirement.

Barnem requires Suppliers to source its Products, in turn, from certified sub-Suppliers to at least ISO 9001 standard (to be intended as minimum requirement) and which operate in accordance with Automotive quality requirements.

3. PROCESS AUDIT

Every process audit ("Process Audit") shall be executed according to VDA 6.3 norm.

In case Customer requests specific quality requirements, the Parties agree and acknowledge that such requirements will be added to the verification done during the Process Audit by Barnem.

4. DEVELOP PHASE

(1) If the order to the Supplier includes development tasks, the Customer shall set out its required specifications in writing. The Supplier undertakes to adhere to the agreed quality management systems even in the planning phase for products, processes and other cross-functional tasks. Moreover, the Parties shall use preventive quality planning methods in the development phase, such as producibility analyses, fault tree analysis, reliability calculation, FMEA etc. Experiences (procedures, process data, capability studies etc.) gained from similar projects are to be taken into account wherever possible. Characteristics with particular requirements as to documentation and archiving are to be determined jointly by both Parties. The specifications must be adhered to.

(2) The Supplier shall check all technical documents required to support series development, such as specifications, drawings, parts lists, and CAD data upon receipt for completeness, consistency, feasibility and appropriateness for the intended application, and shall report any shortfalls it detects to the Customer within 10 working days.
(3) The Supplier is fully responsible for ensuring that its products, including those of his subcontractors, correspond to the currently documented release status and comply with all applicable technical requirements at all times in both the development and series production phases.
(4) The Supplier undertakes to perform relevant risk analyses (e.g. system,

product and process FMEAs, reliability tests, etc.) for all new and changed products and processes, including any variations in quality.

(5) A process plan (machinery, tools, production and testing equipment, procedural guidelines, testing plans, etc.) shall be drawn up based on the results of the risk analysis. Based on the results of the risk analysis, any special characteristics – e.g. critical characteristics (CCs) and significant characteristics (SCs), including the influencing parameters are to be specified for the prototypes, pre-series and series. These are then to be documented in a testing plan and approved by the Customer's quality assurance department.

(6) The production facilities' capability to achieve the special characteristics must be checked and statistically verified, taking into account process-relevant parameters.

(7) Quality checks, including capability analyses for dimension, material, functionality and usability shall be performed in accordance with the respective project stage; these checks shall be documented, indicating the target and actual values at all times, and shall be included in the respective delivery in consultation with the Customer (e.g. VDA Volume 2 or AIAG (Automotive Industry Action Group) PPAP(QS 9000). This also applies to the production of prototypes, test prototypes and initial prototypes. Appropriate error analyses are to be performed in the event of any deviations (process/tools/material/function). With respect to process and product releases, the Supplier must clearly list all deviations in its assessment report, stating the reasons for the deviations, which must have been permitted by the Customer.

(8) Before the start of serial delivery, the Supplier shall perform in paper the process and product approval in accordance with AIAG PPAP (QS-9000) or VDA Volume 2. If the Customer requires a design release, this must be issued prior to the production process and product approval.

5. SERIE PRODUCTION PHASE

(1) The Supplier shall ensure systematic production monitoring using appropriate testing methods in accordance with its test plan. The Parties may agree on further programme and product-specific concepts for series monitoring, if necessary. During the series production phase, the Supplier shall ensure that the product is manufactured in accordance with the technical requirements by performing testing on dimensions, materials and suitability with respect to both functionality and use, and shall mark all packages, containers and transport frames clearly with the test status.

(2) The procedures are to be statistically guaranteed as part of the zero defect strategy. Characteristics corresponding to the production processes of the Customer are to be determined as part of the quality improvement process; evidence must be furnished as to the capability of these characteristics. The documentation shall be verified using control charts (Cpk > 1.33; Cmk > 1.67). Evidence of process and machine capability must also be furnished for subcontractors. 100% testing shall be performed automatically if the required capability is not achieved - assuming no agreement has been made to the contrary in a specific case. At the same time, the Supplier shall implement measures to achieve the required capability. The Supplier must notify the Customer of these measures without delay, including a timetable for their implementation.

(3) The Supplier must notify the Customer immediately of any production disruptions or events that could have a negative impact on the quality, delivery date or delivery

quantity of the production materials ordered, stating the appropriate corrective action to be taken to ensure controlled processes, and to guarantee a continuous materials and parts supply.

(4) The Supplier shall ensure that no defective products are delivered by performing appropriate tests. If the Customer faces production downtime as a result of defective deliveries, the Supplier must take action without delay to remedy the situation (replacement deliveries, sorting or night work).

(5) The Supplier undertakes to label defective parts appropriately and to separate them from those that meet specifications.

(6) If, in exceptional cases, the Supplier isn't unable to supply products that meet the specifications, it undertakes, in all cases, to obtain a special written release from the Customer, which is limited to a timeframe or number of parts prior to delivery. In all cases, the Supplier undertakes to restore production to specification in accordance with the agreements with the Customer and without delay. The Customer reserves the right, under certain circumstances, to insist that 100% testing be performed at the Supplier until the original process level has been restored. The Supplier shall bear the costs of this 100% testing.

(7) Within a minimum yearly recurring test of all parts and components delivered to the customer, all characteristics (in particular function, material and geometry) have to be verified. The extent of these tests can only be reduced with customer's agreement. Testing proofs have to be handed out free of charge to the customer on request.

6. TRACEABILITY

(1) The Supplier undertakes to ensure the traceability of the products it supplies. In the event that a defect has been detected, traceability must be such that the quantities of defective parts/products can be limited.

(2) The delivery documents and packaging labelling must ensure the traceability of the goods.

7. TRANSPORT

(1) The Supplier shall ensure that the goods are delivered by appropriate means of transport agreed with the Customer, in order to avoid damage and quality impairment (e.g. contamination, chemical reactions).

(2)The Supplier must label products and packages in accordance with the requirements agreed with the Customer. The Supplier shall ensure that the labels on the packaged products remain intact even during transportation and storage.

(3) Any deviations from the existing labelling obligations shall require a written agreement between the Parties.

(4) Deliveries shall be made in a manner that adheres to the delivery schedule. Special shipments are to be avoided.

8. OUTGOING GOODS

All series products shall be exclusively inspected by the Supplier.

After the products have been received by Barnem they shall only be inspected for type and quantity as stated in the delivery notice and any externally visible damage that may have occurred during transport, or different agreement into the control plan shared in PPAP phase.

If damage is detected during the inspection of received goods described above, the Supplier is notified immediately and in writing directly by the Warehouse dpt or by

Quality Dpt.
Barnem is not obliged to perform any additional checks of the goods upon receipt and is thus released from the remaining immediate duties to examine and object to defects.
Despite that, the aim of Barnem is to secure final Customer demands and needs, so in case of no immediate reaction from the Supplier, Barnem will allow the selection of the received goods with members of the plant team. All the costs incurred by Barnem will be charged to the Supplier. If necessary, Logistic claim will be raised by Barnem.

When purchased material does not meet Customer requirements (e.g. quality, engineering change level, adherence to specification, last product & process approval standard etc.) a Quality claim will be issued by Barnem.

The Supplier is requested to submit 8D report using the methods to document the problem resolution and measures to prevent its reoccurrence.

From issuing date of complaint, Barnem expect:
within **24h**, D1-D3:

- Problem description
- Problem understanding and problem solving launch
- Containment actions

within **5 working days**, D4-D5:

- Root cause analysis for “Non-Detection”
- Root cause analysis for “Occurrence”
- Definition of actions to remove the root-cause

within **10 working days**, D6-D7:

- Confirmation of implemented actions
- Confirmation of effectiveness of actions to remove Containment actions
- Actions to prevent reoccurrence

Where immediate implementation of the long-term solution is not possible, an action plan shall be provided including due dates for each improvement/action.

Defective parts will be stored in Barnem quarantine area warehouse for 5 working days. If, in this period, the Supplier not proceed with the picking of the rejected parts or no feedback for scrapping, these will be returned by Customer and the transport costs will be charged to the Supplier.

The timing described above may be subject to change if the complaint originates from a km0 complaint/from the Customer's production lines. In this case, the timing described in the customer requirements (CSR) is applied.

(4)Controlled Shipping (Quality Wall)
Should a repetitive failure occur (of the same kind) the Supplier will be asked at their cost to implement additional containment efforts in the form of a formal Containment 1 (CSL-1) or Containment 2 (CSL-2).
Choice between CSL-1 and CSL-2 depends on the frequency and severity of the failure.
CSL-1 is an additional 100% control (in addition to the standard end of line check) set up by Supplier at his plant, using own personnel. 100% of parts shall pass

through this inspection prior to delivery to Customer plant. Defect results and running improvement plan shall be sent at a specified interval (usually weekly) to the Quality Team of Customer for the duration of the control shipping period.
CSL-2 is an additional 100% control but now using an external independent company approved by Costumer to inspect for non-conforming parts (the contract must be established directly between independent company and the supplier). CSL-2 is used if the CSL-1 is unsuccessful. 100% of parts shall pass through this inspection prior to delivery to Customer plant. Defect results and running improvement plan shall be sent at a specified interval (usually weekly) to the Quality Team of Customer for the duration of the control shipping period.
CSL-1 or CSL-2 can only be stopped when the quality level (based on defects in the Controlled shipping inspection activity) has returned to an acceptable level for a minimum one month and minimum 5 shipments or 3000 pieces and with the approval from the Quality Manager of the Customer

9. NON QUALITY COST

See annex 1: Non Quality cost (NQC) for the current year

Signature Supplier: _____

Signature in capital letters: _____