

# **SUPPLIER QUALITY MANUAL**

## 供应商质量手册

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**KONGSBERG**  
AUTOMOTIVE



## PREFACE 前言

This manual has been created to assist our suppliers in understanding the purchasing expectations and quality requirements for products supplied to the Kongsberg Automotive Group. The manual is also a tool to assist Kongsberg Automotive in complying with the IATF 16949 Quality Management System standard and to develop our suppliers.

本手册旨在帮助供应商理解我们的采购期望以及向康斯博格汽车集团供货的质量要求。本手册同时将有助于康斯博格遵守 IATF 16949 质量管理体系标准以及进行供应商开发。

In order for Kongsberg Automotive to maintain compliance to the IATF 16949 requirements, suppliers to Kongsberg Automotive must achieve certification by an accredited certification body to the current version of the ISO 9001 Quality Management System.

为使康斯博格能够始终遵守 IATF 16949，康斯博格的供应商必须依据现行版本 ISO9001 质量管理体系通过认证机构认证。

Additionally, for automotive market, suppliers must achieve IATF 16949 certification OR meet the Minimum Automotive Quality Management System Requirements (MAQMSR) within IATF 16949 (demonstrated by meeting VDA 6.3 audit standards) OR have a written approval from an OEM approving the use of supplier without the correct Quality Management system certification.

此外，对于汽车市场，供应商必须获得 IATF 16949 认证，或满足 IATF 16949 中的最低汽车质量管理体系要求（MAQMSR）（通过满足 VDA 6.3 审核标准证明），或具有设备原产商的书面批准——批准使用未经正确质量管理体系认证的供应商。

When circumstances dictate the requirements and expectations of this manual may be extended to comply with customer specific requirements, statutory and regulatory requirements.

在必要情况下，除本手册的要求和期望外，供应商还需要满足客户特殊要求和遵守相关法律和法规要求。

Through implementation and adherence to the standards stated herein, Kongsberg Automotive looks forward to a long and mutually beneficial relationship with our suppliers.

通过实施和遵守本文件中的标准，康斯博格期待能与供应商建立长期、互利的合作关系。



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# SECTION 1: Introduction

## 第 1 部分：概述

### 1.1 SCOPE 范围

This manual has been developed to communicate the operating principles, general expectations, requirements, and procedures of Kongsberg Automotive. Adherence to the guidelines described in this manual is required by all Kongsberg Automotive suppliers. Acceptance of any and/or all purchase orders constitutes acceptance and commitment on behalf of the recipient to comply with this manual's content. This manual supplements the supply agreement between Kongsberg Automotive and the supplier, and it describes the minimum requirements and expectations for the supplier's quality system and quality assurance work and procedures. Further requirements may be applicable depending on Kongsberg Automotive end customer requirements. System improvements that exceed the requirements specified within this manual are always encouraged.

本手册旨在传达康斯博格的经营原则、一般期望、要求和程序。康斯博格所有供应商都应遵守本手册中所述的准则。接受任何和/或所有采购订单表示接收方接受并承诺遵守本手册中的内容。作为对康斯博格与供应商之间供货合同的补充，本手册阐明了康斯博格对供应商质量体系和质量保证工作及程序的最低要求和期望。根据康斯博格终端客户的要求，可能会产生其他进一步的要求。当然，我们非常欢迎供应商做出任何超出本手册要求的系统改进。

### 1.2 PURPOSE 目的

We expect that KA suppliers support our commitments as described in latest version of Kongsberg Automotive's Quality Policy (<http://www.kongsbergautomotive.com>). In order to fulfill this objective, it is necessary that all functions within Kongsberg Automotive and their business associates operates with a "Zero Defect" strategy. We must both strive for a fundamental quality management system that provides for continuous improvement in the quality of products. Emphasis shall be on defect prevention and the reduction of variation and waste in the supply chain.

我们希望康斯博格的供应商能支持我们在最新版康斯博格质量政策中所述的承诺（<http://www.kongsbergautomotive.com>）。为了实现这一目标，所有康斯博格内部职能机构以及合作伙伴应贯彻“零缺陷”战略。我们必须努力建立基础质量管理体系并对产品质量进行持续改进。我们应特别重视缺陷预防并减少供应链中可能发生的变化和浪费。

### 1.3 APPLICATION 应用

The expectations and requirements described in this manual apply to all suppliers of prototype and serial production products. Suppliers must meet all applicable requirements specified herein including all product related Customer Specific Requirements as required. Kongsberg Automotive requires the use of all relevant current AIAG core tools (APQP, PPAP, FMEA, MSA and SPC) and CQI special process requirements as the basis for all process and product quality assurance unless otherwise agreed.

本手册中所述期望和要求对所有原型和批量生产产品供应商都适用。供应商应遵守本手册中规定的适用要求，包括所有与产品相关的客户特殊要求。除非另有约定，康斯博格要求使用所有相关的现有 AIAG 标准核心工具（APQP、PPAP、FMEA、MSA 和 SPC）以及 CQI 特殊流程要求作为保证所有流程和产品质量的基础。

### 1.4 IMPLEMENTATION 实施

Suppliers are responsible for the development, documentation, implementation, and maintenance of an ISO 9001 Quality Management System according to the latest revision (at minimum).

供应商负责根据最新版本 ISO 9001 质量管理体系标准要求开发、记录、实施并维护质量管理体系（最低要求）。



Additionally, for automotive market, suppliers must achieve IATF 16949 certification OR meet the Minimum Automotive Quality Management System Requirements (MAQMSR) within IATF 16949 (demonstrated by meeting VDA 6.3 audit standards) OR have a written approval from an OEM approving the use of supplier without the correct Quality Management system certification.

此外，对于汽车市场，供应商必须获得 IATF 16949 认证，或满足 IATF 16949 中汽车质量管理体系的最低要求（MAQMSR）（以满足 VDA 6.3 审核标准为证），或具有设备原产商的书面批准——批准使用未经正确质量管理体系认证的供应商。

Suppliers are strongly encouraged to become certified to the quality management system standard IATF 16949, and the environmental management system ISO 14001. Suppliers meeting both of these requirements will be preferred for new business.

强烈鼓励供应商获得 IATF 16949 质量管理体系标准认证和 ISO 14001 环境管理体系的认证。满足这两个要求的供应商将成为新业务的首选。

When circumstances dictate additional requirements to this manual may be required to comply with Kongsberg Automotive specific customer requirements, statutory and regulatory requirements.

在必要情况下，除本手册的要求和期望外，供应商还需要满足客户特殊要求和遵守相关法律和法规要求。

### **1.5 EXCEPTIONS 除外情形**

Suppliers are responsible for implementing the requirements of this manual in full, unless they have agreements in writing from KA corporate supplier quality representative.

供应商有责任完全执行本手册的要求，除非他们获得康斯博格公司供应商质量代表的书面同意。



## SECTION 2: KONGSBERG AUTOMOTIVE EXPECTATIONS 第 2 部分：康斯博格的期望

### 2.1 ENGINEERING / TECHNICAL SUPPORT 工程/技术支持

Kongsberg Automotive is dedicated to the manufacture of the highest quality products. In order for this objective to be achieved, all suppliers shall offer engineering and technical support to Kongsberg Automotive when said support is requested. The supplier must communicate up to date contact lists, including escalation contacts, to their KA contacts.

康斯博格致力于生产最高质量的产品。为了实现这一目标，所有供应商应在康斯博格需要之时提供相应的工程和技术支持。供应商必须向他们的康斯博格联系人提供最新联系人列表，包括升级联系人。

### 2.2 MANUFACTURE CAPABILITY / CAPACITY / LOCATION 制造能力/地点

Suppliers are expected to have the resources necessary (people, property, facilities, equipment, and materials) to supply the products required to accommodate Kongsberg Automotive's project and production schedule.

我们期望供应商能够提供合适、必要的资源（人力、财产、设施、设备和材料），按照康斯博格的项目和生产计划供应所需的产品。

### 2.3 CONSISTENT QUALITY 质量稳定

Zero-defect products are required from suppliers to Kongsberg Automotive. Any deviation from this will result in rejection and return of the product to the supplier with subsequent charges attached. The supplier is expected to reduce any ongoing fault rates (as a minimum, reject rates should halve year on year), failure to improve may mean invoking the KA escalation process.

康斯博格要求供应商提供零缺陷产品。若无法满足这一要求会导致产品遭拒收及退回供应商并产生后续费用。供应商应降低任何正在发生的故障率（至少废品率应同比减半），若无法实现这一改进会触发康斯博格质量管理升级程序。

Without limiting KA's legal and contractual rights: Payment by Kongsberg Automotive shall not constitute acceptance. Even after acceptance of a shipment, Kongsberg Automotive reserves the right to return any material that proves to be defective for full credit. Defective material shall be returned at the supplier's expense and account debited accordingly. Additional charges for sorting, administrative fees and other related costs or losses (extra transport, end customer charges, etc.) will also be charged back.

在不限制康斯博格的法律和合同权利的情况下：康斯博格的付款行为并不表示对产品的验收。即使在接受到货产品之后，康斯博格仍有权将被证明有缺陷的所有材料全部退回。退回缺陷材料的费用由供应商承担，并相应记入借方账项。康斯博格就此支付的额外分拣费、管理费和其他相关费用（额外的运输、终端客户费用等）也将由供应商退回或予以抵扣。

### 2.4 COOPERATIVE MANAGEMENT ATTITUDE 合作管理态度

Kongsberg Automotive expects our supplier's top management to share our commitment to meet or exceed our customer's quality expectations through continuous improvements. It is also expected that the entire supplier organization will give their full support to the relationship that exists between our companies and demonstrate flexibility in assisting Kongsberg Automotive in meeting all of our customer's requirements.

康斯博格希望供应商的最高管理层通过持续改进实现我们的承诺，达到或超出客户的质量预期。同时我们希望整个供应商组织能够全力支持双方的合作关系，为康斯博格满足客户要求提供灵活的协助。

The Supplier is required to maintain a Kongsberg Automotive plant contact, who can be readily available to assist in solving problems when needed.

供应商应与康斯博格汽车厂保持联系，以便在需要时随时协助解决问题。



## **2.5 RIGHTS OF VERIFICATION OF PRODUCTS / PROCESSES 产品 / 流程验证权利**

Kongsberg Automotive reserves the right to verify the products and manufacturing processes at the supplier's premises by Kongsberg Automotive representatives, our customer and/or their customer. This can be done by different kinds of audits and the supplier will be notified in advance.

康斯博格有权通过康斯博格的代表、我方客户和/或客户的客户在供应商场所对产品和制造过程进行验证。验证可以采取多种不同审查方法进行，并且会提前向供应商发出通知。



## SECTION 3: SUPPLIER SELECTION AND MONITORING

### 第 3 部分：供应商选择和监控

#### 3.1 SUPPLIER ASSESSMENT AND SELECTION 供应商评估和选择

Kongsberg Automotive's supply base shall consist of organizations supportive of our business needs. Kongsberg Automotive utilizes controlled methods through which suppliers are evaluated, selected, developed and monitored.

康斯博格的供应商们需要根据我们的业务需求积极提供相关支持。康斯博格通过受控的方式实施供应商评估、选择、开发和监控。

Criteria for assessment and selection of suppliers, for placement on Kongsberg Automotive's Preferred Suppliers List, is based on the supplier's abilities to meet and/or exceed minimum quality and purchasing requirements and expectations.

对供应商被纳入康斯博格优选供应商名单的评估和选择标准将基于供应商达到和/或超出最低质量和采购要求以及期望的能力。

#### 3.2 SUPPLIER MONITORING 供应商监控

All claims related to suppliers will be reported into the Kongsberg Automotive global computer system. On a monthly basis the quality department will present internal reports based on this data (e.g. PPM and number of claims) and follow up the suppliers that cannot meet our requirements. As needed Kongsberg Automotive will call these suppliers for meetings and will expect that the top management is involved and can show us their action plans to solve the problem. New Business on Hold status and escalation process will be used if there is a shortcoming in the supplier's performance, audit result and/or their ability to solve problems.

所有与供应商相关的索赔都会录入康斯博格全球电脑系统。每个月质量部门会根据这些数据（如 PPM 和索赔数量）提交内部报告并跟进核实供应商是否能满足康斯博格的要求。若需要，康斯博格会召集供应商召开会议并希望最高管理人员能够参加并向康斯博格展示他们解决有关问题的行动计划。若供应商的表现、审核结果和/或解决问题的能力不足，将导致新业务进入等待状态及开启质量管理升级流程。

All suppliers will be invited to the Jaggaer system where suppliers can review and assure their supplier related performance scorecard along with other relevant information.

所有供应商都将被邀请入 Jaggaer 系统内，在系统内供应商可以审查并确保获得供应商相关的绩效记分卡以及其他相关信息。

For new or modified parts, suppliers may be invited by their SQ contact to access sites for file sharing of SPQ/PPAP documentation.

对于新的或改良的零件，供应商可能会被他们的 SQ 联系人邀请访问网站并共享 SPQ/PPAP 文件。





## SECTION 4: QUALITY REQUIREMENTS

### 第 4 部分：质量要求

#### 4.1 QUALITY MANAGEMENT SYSTEM 质量管理体系

Suppliers are responsible for the development, documentation, implementation, and maintenance of an ISO 9001 Quality Management System according to the latest revision (at minimum). Additionally, for automotive market, suppliers must achieve IATF 16949 certification OR meet the Minimum Automotive Quality Management System Requirements (MAQMSR) within IATF 16949 (demonstrated by meeting VDA 6.3 audit standards) OR have a written approval from an OEM approving the use of supplier without the correct Quality Management system certification.

供应商（至少）需要依据最新改动版本对 ISO9001 质量管理体系标准的开发、记录、实施及维护负责。此外，对于汽车市场，供应商必须获得 IATF 16949 认证，或满足 IATF 16949 中汽车质量管理体系的最低要求（MAQMSR）（以满足 VDA 6.3 审核标准为证），或具有设备原产商的书面批准——批准使用未经正确质量管理体系认证的供应商。

Suppliers Quality Management System shall be formally documented, implemented and maintained to ensure that supplier's products conform to the identified purchase specifications, engineering or material specifications and/or contract requirements. The system shall be defined and documented in the supplier's own Quality Manual. This manual shall be made available to Kongsberg Automotive for review upon request. 供应商质量管理体系应有正式的文件记录，并得到有效实施和维护以确保供应商的产品符合规定的采购规范、工程或材料规范和/或合同要求。供应商需要在其内部质量手册中明确定义并记录该体系的相关信息。若康斯博格要求，应有权查阅供应商的质量手册。

#### 4.2 PRODUCT QUALITY 产品质量

Suppliers are fully responsible for the quality of their products including their sub-suppliers. All suppliers are responsible for providing products that meet all Kongsberg Automotive requirements, specifications, and drawings as identified on the purchase order and that the products are free from defects as warranted in Kongsberg Automotive General Purchasing Conditions. Zero-defect products are required from all suppliers.

供应商应对其产品包括子供应商的产品质量全权负责。所有供应商应负责提供满足采购订单中康斯博格各项要求、规范和图纸要求的产品，并确保产品无缺陷，符合在康斯博格通用采购条件中做出的保证。所有供应商应提供零缺陷产品。

#### 4.3 SUPPLIER PART QUALIFICATION (SPQ/APQP) 供应商零件合格检验 (SPQ/APQP)

All suppliers are required to complete SPQ/APQP on all projects (new or changed parts) according to the provided time schedule, and report on the activities as requested. Any change in the time schedule needs to be approved by Kongsberg Automotive. This process will be followed up by the Kongsberg Automotive Project Supplier Quality Responsible as identified in the SPQ.

所有供应商需按照规定的时间安排表完成所有项目（新的或变更零件）的 SPQ/APQP，并根据要求对相关活动进行汇报。对时间安排表做出任何变更需要经康斯博格批准。这一流程将由 SPQ 中确定的康斯博格汽车项目供应商质量负责人跟进。

The SPQ/APQP process follows AIAG PPAP process, which is the minimum standard for automotive applications. For other (non-automotive) applications the SPQ will be adapted to customer/regulatory requirements. The supplier is responsible for raising any concerns with the product specification, especially those that might impact 'zero defect' serial supply within the feasibility process. Further details of the Supplier Part Qualification process are available from KA SQ and must be agreed to at the commencement of any new business (including modifications to existing parts).



SPQ/APQP 流程遵循 AIAG PPAP 流程，AIAG PPAP 为汽车应用的最低标准。对于其他（非汽车）应用，SPQ 将根据客户/监管要求进行调整。供应商有责任提出与产品规格有关的任何问题，特别是那些在可行性过程中可能影响“零缺陷”批量供货的问题。供应商零件合格检验流程的进一步细节可从康斯博格 SQ 处获得，并且必须在任何新业务（包括对现有部件的更改）开始时双方达成一致。

#### 4.4 HANDLING OF NON PPAP APPROVED PARTS 非 PPAP 批准零件的处理

For all deliveries of prototype, first off-tool and pre-series components, the supplier must provide as a minimum an inspection report detailing:

对于所有原型、首次使用的工具和试生产前的部件，供应商需至少提交一份检查报告，详细说明：

- Five parts per batch: full 100% control on all characteristics (must be separately identified).  
每批次五个零件：对所有特征进行 100% 的控制（分别阐述）
- The remaining parts: inspection of all key characteristics defined on the drawing, specification or as detailed in the SPQ/APQP process.  
剩余部件：根据图纸、规范或 SPQ/APQP 过程的详细说明对所有关键特征进行检查。
- Any additional requirements as defined on the order  
订单上载明的任何附加要求
- Exceptions must be agreed with KA SQ responsible  
例外情况必须获得康斯博格 SQ 负责人的同意

#### 4.5 PRODUCTION PART APPROVAL PROCESS (PPAP) 生产件批准程序 (PPAP)

The PPAP with all requested documentation and samples according to the SPQ/APQP process shall be available or submitted on the agreed date, failure to meet agreed project timing (SPQ timing) may mean escalation process being invoked. This documentation shall show that all requirements specified in our drawings and specifications are fulfilled. The supplier shall use AIAG PPAP level 3 as the default level for all submissions unless otherwise specified by KA SQ.

PPAP 连同根据 SPQ/APQP 流程要求提供的所有文件和样品应在约定的日期提供或提交。不遵守约定的项目时间（SPQ 时间）可能会触发质量管理升级程序。该文件中应阐明，图纸和规范中规定的所有要求均已得到满足。供应商应使用 AIAG PPAP 3 级作为所有提交的文件和样品的默认级别，除非康斯博格的 SQ 另有规定。

The supplier can apply for an Interim approval (identified in the PSW) if the part or documentation cannot conform to all specified requirements. The supplier must apply for this as soon as they see that they cannot present a complete PPAP on the agreed date. The Interim approval shall specify what requirement the supplier cannot fulfill and an action plan showing how and when the part (e.g.: 100% sorting before shipping to KA) or documentation will be according to specification. An interim approval is always restricted for a limited number of parts or time period.

若零件或文件无法满足规定的要求，供应商可以申请临时批准（PSW 中列明）。供应商一旦发现无法在约定日期提交完整的 PPAP，应尽快提出申请。临时批准中应具体说明供应商未完成的要求并通过行动计划具体说明零件（如装运至康斯博格前进行 100% 分拣）或文件如何以及何时能够满足规范要求。通常临时批准仅限于一定数量的零件或一定时期。

Kongsberg Automotive reserves the right to inspect these samples for conformance and will return a signed Warrant indicating whether it is approved to produce parts for serial production purposes. This report will be submitted to the Supplier. Shipping of serial production material is only allowed with an approved PSW (Part submission Warrant) or a signed Interim Approval by Kongsberg Automotive. If KA requires additional or alternative documentation, this will be communicated within the SPQ process.

康斯博格有权检查该等样品的符合性并返回一份经签署的证明，具体说明是否批准该等零件进行批量生产。该报告会提交给供应商。开始装运批量生产的材料前必须获得经康斯博格批准的 PSW（零件提交保证书）或经签署的临时批准。如果康斯博格需要额外的或替代的文件，将在 SPQ 流程中进行沟通。

#### 4.6 SERIAL PRODUCTION SAFE LAUNCH PLAN 批量生产安全投产计划



After PPAP Approval the Supplier is required to implement a reinforced inspection according to agreed Supplier Part Qualification (SPQ), this might be related to a period of time or a specific number of produced parts. The reinforced inspection shall continue until no defects are found according to the agreement. This reinforced inspection plan must contain all key characteristics defined on the drawing as a minimum requirement and will require submission and approval by the receiving Kongsberg plant before the SOP. The plan should be submitted as part of the PPAP submission, as per the SPQ process. Safe launch plan will also be used for significant changes in the process, or if there has been a substantial gap between production batches (>90 days)

在 PPAP 批准后，供应商应根据约定的供应商零件合格检验（SPQ）实施强化检查，检查内容可能涉及一定时期或特定数量的产品零件。该强化检查在根据协议要求无任何缺陷时结束。作为最低要求，强化检查计划中应包含图纸上规定的所有关键特征并需在 SOP 之前提交并由各康斯博格工厂批准。根据 SPQ 流程，该计划应作为 PPAP 提交的一部分予以提交。安全投产计划也将用于流程中的重大变化，或者如果生产批次之间有较长时间间隔(> 90 天)的情况下。

The reinforced inspection plan will be agreed with KA SQ as a minimum be subject to the following rules:  
强化检查计划将与康斯博格 SQ 达成一致，该计划至少要遵循以下规则进行：

- 100% inspection of all key characteristics based on the Kongsberg Automotive requirements and/or non-conforming capability results.  
根据康斯博格要求和/或不符合能力要求的结果对所有关键特征进行 100% 检查。
- The production control plan frequency shall be doubled for all other characteristics.  
对其他所有特征的生产控制计划频率应加倍。
- For appearance items 100% inspection shall be based on the approved Boundary and Master Samples.  
应根据批准的边界样品和主样品对外观项目进行 100% 检查。

#### 4.7 PRODUCT RE-VALIDATIONS (RE-PPAP) 产品再验证 (RE-PPAP)

When Kongsberg Automotive requests a product re-validation of serial parts, Standard PPAP/SPQ documents are to be submitted/re-submitted upon request, these documents must not be more than one year old. Product re-validations will be supplied free of charge unless otherwise agreed in the contract.

在康斯博格要求对批量制造零件产品进行再验证时，应根据要求提供/重新提供标准的 PPAP/SPQ 文件，这些文件不得超过一年。除非合同中另有约定，否则产品的重新验证将免费提供。

#### 4.8 STATISTICAL CONTROL (SPC) 统计过程控制 (SPC)

Special Characteristics (as defined on the drawing/ specification) and process characteristics identified by the supplier, shall be subject to statistical control performed in accordance with the rules defined in the latest edition of the AIAG PPAP, SPC, and VDA /AIAG FMEA manuals.

供应商确定的特殊特性（如图纸/规范中所定义）和工艺特性应按照最新版 AIAG PPAP、SPC 和 VDA /AIAG FMEA 手册中定义的规则进行统计控制。

##### **Initial Capability: 初始能力:**

Products are taken from pre-production at the manufacturing location(s) and analyzed statistically. Parts from each unique production process e.g. duplicate assembly line and/or work cell, each position of a multiple cavity die, mold or pattern, shall be measured and representative parts tested. Kongsberg Automotive requirement on initial capability studies is Min 1.67 Ppk (or min 2.0 Ppk for [1D]/safety characteristics) unless otherwise specified on the part drawing / specification

在试验性生产阶段从制造地选取产品并做统计分析。对每个独特的生产过程中的零件进行测量并对代表性零件进行测试，比如重复装配线和/或工作间，多腔模每个位置，模具或图案。康斯博格对初始能力研究的要求为最低 1.67Ppk（或最低 2.0 Ppk 的[1D]/安全特性），除非零件图纸/规范中另有规定。

##### **On-going Control: 持续控制:**



For special characteristics, SPC shall be used to control the process output unless otherwise specified on the part drawing / specification. The Kongsberg Automotive requirement on serial production capability is Min 1,33 Cpk (or min 2.0 Cpk for [1D]/Safety Characteristics) unless otherwise specified on the part drawing / specification. In the event of noncompliance with the capability requirements, OR if SPC is not possible on the process, the supplier is required to implement a mechanical Poka-Yoke on the corresponding characteristics and/or implement robust 100% inspection checks until the agreed action plan is completed and the capability results fully comply with the requirements. These actions (100% inspection or addition of mechanical Poka-Yoke) shall be fully documented in the Control Plan and the process FMEA.

对于特别特征，应采用 SPC 控制过程输出，除非零件图纸/规范中另有规定。若无另外约定，康斯博格对批量生产的最低 1.33Cpk（或最低 2.0 Ppk 的[1D]/安全特性）。若供应商不符合生产能力要求，或者 SPC 在过程中不可行，供应商需要在相应的特性上实施机械防错机制，和/或进行 100%检查直到完成约定的行动计划并且能力结果完全符合要求。相关行动（100%分拣或额外的机械防错机制）应被完整记录在控制计划和流程 FMEA 中。

#### 4.9 PROCESS RECORDS 流程记录

Process verification and inspection records shall be maintained and be available for Kongsberg Automotive upon request. All records shall be retained for a time period of minimum 3 years after production end or for an agreed period of time.

应保留过程验证和检查记录并在康斯博格要求时提供。所有记录在生产结束后应保存至少三年或按照约定时间保存。

As a minimum or as designated in the SPQ / CSR's, during the serial production, the supplier shall maintain: 在量产过程中，根据 SPQ / CSR 中最低或指明的要求，供应商应保留：

- > Process change record  
过程变更记录
- > Ongoing quality control records  
持续质量控制记录
- > Production record  
生产记录

#### 4.10 NON-CONFORMING PRODUCT CONTROL 不合格品控制

If a supplier's parts are found to be out of agreement the supplier will be notified by Kongsberg Automotive personnel to provide immediate containment and support to resolve the problem using the 8D format and Root Cause Analysis tools. The supplier is responsible for all related costs due to a non-conforming part.

若供应商的零件与约定要求不符，康斯博格相关人员将通知供应商立即采取控制并提供支持，并采用 8D 格式和根本原因分析工具解决问题。供应商负责因不合格零件产生的所有相关费用。

A most serious concern is when a supplier product/process shuts down a Kongsberg Automotive production line making delivery to a Kongsberg Automotive customer late. Any condition causing line shutdown and late shipment warrants the supplier's immediate action to eliminate the condition. The supplier is responsible to address containment of the problem at their facility, parts in transit, parts in Kongsberg Automotive stocks and at Kongsberg Automotive end customer(s), including Safety Stocks.

最严重的问题是供应商产品/过程导致康斯博格生产线关闭，而这一生产线随后需要为康斯博格客户供货。若出现生产线关闭和延迟装运，供应商应立即采取行动解决这一问题。供应商负责解决在其工厂、在途零件、康斯博格库存中的零件以及康斯博格终端客户库存零件（包括安全库存）中的问题控制工作。

If requested by Kongsberg Automotive a supplier or a supplier hired third party company (can be directed by Kongsberg Automotive) may send in a team to sort parts in house at the supplier expense. If Kongsberg Automotive must sort supplier parts in order to keep production supplied with defect free components, the Supplier will be charged for the sorting cost. This charge may be applied to both components and finished assemblies in which the components are used. If a supplier defect causes Kongsberg Automotive's finished



product to be reworked or scrapped, all charges incurred will be the responsibility of the supplier. All other related costs will be charged to the supplier including eventual costs from Kongsberg Automotive customer. The supplier is responsible for costs even if the defect is caused within their supply chain (including logistics and packaging).

若康斯博格要求，供应商或供应商雇佣的第三方公司（可由康斯博格指定）可派出一支团队进行内部零件分拣，费用由供应商承担。如康斯博格必须对供应商零件进行分拣以确保使用零缺陷零件进行生产，相应分拣费用由供应商承担。该费用适用于涉及的部件以及所有使用该等部件的成品组件。若供应商产品缺陷导致康斯博格成品返工或报废，所有相关费用由供应商承担，包括康斯博格客户处的最终成本。即使缺陷是由供应商的供应链（包括物流和包装）造成的，供应商也要对相关费用负责。

If a supplier cannot implement a permanent corrective action to supply zero defects to Kongsberg Automotive and problems continue, Kongsberg Automotive will implement a quality level 2 escalation. This shall include a containment process that must be implemented until the supplier has shown their ability to ship defect-free material on a continuous basis as outlined in escalation letter. A Kongsberg Automotive representative will follow up the containment actions.

若供应商无法实施永久性纠正措施以向康斯博格提供零缺陷产品，并且问题持续，康斯博格将启动 2 级质量管理升级，包括实施必要的控制流程，直到供应商证明其有能力在质量管理升级通知函中规定的连续时期内提供零缺陷的材料。康斯博格的代表将跟进控制措施。

If another defect is found within this containment period, Quality level 3 escalation (New Business on Hold) will be implemented at the Suppliers' expense. The escalation process is not designed to penalize suppliers, but the purpose is to assist and support suppliers in their effort to achieve Kongsberg Automotive targets, requirements and to prevent any non-conforming part to be delivered.

若在此控制期间又出现了其他缺陷，将触发 3 级质量管理升级（新业务进入等待状态），供应商将自行承担相关费用。该质量管理升级过程设计不是为了处罚供应商，而是希望能够帮助并支持供应商努力达到康斯博格的目标和要求并防止任何不合格零件的交付。

If a supplier detects non-conforming products prior to shipment to Kongsberg Automotive, the supplier must immediately determine the extent of the problem and take actions to ensure no defective products are shipped to KA. If suspect material has been shipped, the supplier must notify all Kongsberg Automotive user plants and implement all necessary actions to prevent the material being used in production.

若在向康斯博格发货之前发现不符合产品，供应商应立即确定问题的严重程度并采取措施确保未将任何缺陷产品装运至康斯博格。若怀疑有缺陷的产品已被发出，供应商应立即通知所有康斯博格用户工厂并采取一切必要措施防止材料投入生产。

Any rework or repairs to suspect material must be conducted in a controlled manner that assures that the reworked or repaired product meets Kongsberg Automotive specifications. Written instructions should detail the rework or repair, the re inspection of reworked product and the return of this product to normal production flow.

对任何可疑材料的返工或返修必须在受控方式进行并确保返工或返修后的产品达到康斯博格规范要求。必须提供书面说明详细描述返工或返修方法，返工产品检查以及恢复产品正常生产流程的所有信息。

A formal interim approval request that includes deviation and corrective action information from the supplier must be sent to Kongsberg Automotive, and an approval must be received from the user plant before any reworked material is shipped to Kongsberg Automotive.

供应商应向康斯博格发送一份正式的临时批准请求，其中包含偏差和纠正行动信息，并且须得到用户工厂的批准方可将任何返工材料装运至康斯博格。

A copy of the vendor complaint will be distributed to the supplier when defective material has been found, initial response with initial containment must be completed and returned latest within 24 hours, corrective actions must be defined and reported within 7 calendar days unless otherwise agreed. The supplier is expected to implement all necessary actions to close the 8D within 30 calendar days unless otherwise agreed. The supplier will be notified if any aspect of the 8D report is not acceptable and will be required to resubmit the updated report in a timely fashion. Failure to meet agreed timing in completing the 8D may invoke the KA escalation process.



发现缺陷材料后，会向供应商发送一份供应商投诉信，除非另有约定，供应商应在 24 小时内填写并返回包含初始控制方法的初始响应计划，并在 7 个日历日内确定并汇报纠正计划。除非另有约定，我们希望供应商在 30 个日历日内采取所有必要的措施完成 8D 报告。若 8D 报告有任何不妥之处我们会通知供应商，供应商应及时提交更新的报告。若未按照约定时间要求完成 8D 报告，会触发康斯博格质量管理升级程序。

#### 4.11 SUPPLIER REQUEST FOR CHANGE APPROVAL 供应商变更批准请求

Any changes on the product, manufacturing process (including production location) or sub-supplier that may result in an impact on product quality and performance must be reviewed and approved with Kongsberg Automotive in writing. The supplier shall submit a change request to Kongsberg Automotive specifying the change and the implementation plan by using the KA change request form that is available on [www.kongsbergautomotive.com](http://www.kongsbergautomotive.com). Kongsberg Automotive will then investigate the possibility to implement the change and will inform the supplier when a decision has been taken. A re-validation PPAP of the part and manufacturing process will be requested if the change is accepted.

任何会对产品质量和性能产生影响的产品、制造过程（包括生产地点）或子供应商的变更应通过康斯博格审查并经书面批准。供应商应通过康斯博格变更申请表向康斯博格提交变更申请，阐明变更内容以及具体实施方案。变更申请表可在 [www.kongsbergautomotive.com](http://www.kongsbergautomotive.com) 上获取。之后康斯博格会对变更的可行性进行调研并将所做决定告知供应商。如康斯博格同意相关变更，则需要供应商执行零件和制造过程的再验证 PPAP。

Any changes on serial products or serial manufacturing processes implemented without KA approval will be handled as a trust violation between our companies and invoking the KA escalation process.

未经康斯博格批准对批量制造产品或批量制造过程做出任何变更将被视为内部信任违背并且会触发康斯博格质量管理升级程序。

#### 4.12 IMDS, CAMDS (OR OTHER EQUIVALENT REPORT) IMDS, CAMDS 报告（或其他同等报告）

For each product/part number, the supplier shall submit a MDS (Material Data Sheet) consisting of a declaration of all materials included and their weight. The MDS must be accepted by Kongsberg Automotive before the PPAP/PSW can be approved. Submission can be requested earlier in the process (defined in SPQ). 供应商应就每个产品/零件提交一份 MDS（材料数据表），包含所有材料及其重量的申明。在 PPAP/PSW 获批准前，MDS 需要由康斯博格先接受。在流程（见 SPQ 定义）中可要求提前提交。

If required by SPQ and/or design specifications, components/Semi components/Materials delivered to Kongsberg Automotive (KA) must be declared by supplier in IMDS (International Material Data System), CAMDS (China Automotive Material Data System), other customer specified systems (eg CDX) or with a separate FMD (Full Material Declaration), FMD form can be downloaded from [www.kongsbergautomotive.com](http://www.kongsbergautomotive.com).

根据 SPQ 和/或设计规范要求，针对交付给康斯博格（KA）的部件/半成部件/材料，供应商需要在 IMDS（国际材料数据系统）、CAMDS（中国汽车材料数据系统）或单独的 FMD（全部材料申报）中申明。FMD 表格可从 [www.kongsbergautomotive.com](http://www.kongsbergautomotive.com) 下载。

#### 4.13 SPECIAL PROCESSES 特殊流程

If required by SPQ and/or design specifications, suppliers shall comply with the requested AIAG standards / industry specific standards / KA specific requirements related to special processes, for example:

按照 SPQ 和/或设计规范要求，供应商应遵守特殊流程相关的 AIAG 标准/行业特定标准/康斯博格特定要求，例如：

- CQI-9 Special Process: Heat Treat System Assessment  
CQI-9 特殊流程：热处理系统评估
- CQI-11 Special Process: Plating System Assessment  
CQI-11 特殊流程：电镀系统评估



- ▶ CQI-12 Special Process: Coating System Assessment  
CQI-12 特殊流程：涂层系统评估

Full list of all AIAG CQI standards can be found and purchased at [www.aiag.org/](http://www.aiag.org/)  
所有 AIAG CQI 标准的完整清单可在 [www.aiag.org/](http://www.aiag.org/) 查询及购买。

#### 4.14 REACH REPORT REACH 报告

If required by SPQ and/or design specifications, suppliers shall comply with the EU Registration Evaluation Authorization and restriction of CHEMICALS (REACH) requirement.

按照 SPQ 和/或设计规范要求，供应商应遵守欧盟《关于化学品注册、评估、许可和限制法案》（REACH）的要求。

“REACH makes industry responsible for assessing and managing the risks posed by chemicals and providing appropriate safety information to their users. In parallel, the European Union can take additional measures on highly dangerous substances, where there is a need for complementing action at EU level.”

“REACH” 实现行业内对化学品风险的评估和管理并可为使用者提供相关的安全信息。同时，若欧盟认为必要，可以针对高度危险物质采取额外的应对措施。

Reference: [http://ec.europa.eu/growth/sectors/chemicals/reach\\_en](http://ec.europa.eu/growth/sectors/chemicals/reach_en)

参考文件: [http://ec.europa.eu/growth/sectors/chemicals/reach\\_en](http://ec.europa.eu/growth/sectors/chemicals/reach_en)

#### 4.15 MATERIAL SAFETY DATA SHEET 化学品安全数据表

A material safety data sheet in accordance with GHS guideline must be sent and approved by the receiving Kongsberg Automotive plant before delivery, of any chemicals used in production processes is allowed. The Globally Harmonized System (GHS) is an international approach to hazard communication, providing agreed criteria for classification of chemical hazards, and a standardized approach to label elements and safety data sheets.

针对生产过程中使用的任何化学品，供应商需要在交货前向康斯博格收货工厂提交一份符合 GHS 准则的材料安全数据表，并获得工厂批准。全球化学品统一分类和标签制度（GHS）是一种全球通用的危害信息沟通方法，针对化学品危害提供了约定的分类标准，以及适用于标签元素和安全数据表的标准化方法。

#### 4.16 PRODUCT TRACEABILITY 产品可追溯性

All Suppliers to Kongsberg Automotive must have an identification system that distinguishes one lot/batch/part from another when shipping finished product.

康斯博格所有供应商都应建立识别系统，在装运成品时能够将每批次/每个零件区分开。

Each lot/batch/part of material should be clearly identified on the product (where applicable) according to the part drawing or as agreed if not specified on the drawing, and on the product packaging.

每批/每部分材料应根据零件图在产品（如适用）上明确标识，如果图纸上没有规定，则应按照约定在产品包装上明确标识。

The traceability system must comply with the FIFO (First In – First Out) principles for incoming and outgoing material.

可追溯系统必须符合进出物料的 FIFO（先进先出）原则。

Specific traceability requirements for special characteristics / safety parts will be specified in SPQ.

SPQ 将规定特殊特性/安全零件的具体可追溯性要求。

#### 4.17 TOOLS & GAUGES LABELING 工具&仪表标签

All Tools and Gauges, property of Kongsberg Automotive, or belonging to Kongsberg Automotive on the behalf of Kongsberg Automotive Customers, must be properly labeled by the supplier according to Kongsberg Automotive requirements in tool Purchase Order.



供应商应根据康斯博格在工具采购订单中提出的要求对所有属于康斯博格或代表康斯博格客户所有的工具和仪表财产进行合理标记。

#### 4.18 CONTINUOUS IMPROVEMENT 持续改进

Continuous improvement in the quality of products and/or manufacturing processes are key to be a supplier to Kongsberg Automotive. The supplier should maintain documented evidence of continuous improvement for review upon request by Kongsberg Automotive's representative. All suppliers shall show a proactive approach that supports driving the reduction of process variation and waste within their business, utilizing continuous improvement tools and techniques.

对于康斯博格的供应商而言，进行持续产品质量改进至关重要。供应商应保留持续改进的文件证明，若康斯博格代表要求，应提供相关资料接受审查。所有供应商应采取积极措施，通过持续改进工具和技术帮助减少自身业务过程中的变更和浪费。

Kongsberg Automotive may offer supplier development programs with our preferred partners to continue successful growth of the business and improve performance related to quality and delivery. We will need the supplier's full commitment in order to achieve a successful activity if agreed to this joint activity.

为实现业务的持续成功增长并不断改进质量和交付表现，康斯博格将为我们优选的合作伙伴提供供应商发展计划空间。若您同意这一共同行动，我们需要您全情投入，共同努力取得行动的成功。

#### 4.19 PRODUCT SAFETY AND PRODUCT LIABILITY 产品安全性和产品责任

Suppliers to Kongsberg Automotive have the responsibility for all product safety and product liability in delivered parts, including their Sub-suppliers that are used in finished KA products. The Supplier shall implement an organization, a process and tools to ensure the product safety of its parts and their sub-supplier's parts to minimize product liability risks.

康斯博格的供应商应对所有产品的安全和交付零件的产品责任负责，包括参与康斯博格成品制造的子供应商。供应商应建立组织、实施相关过程和提供相关工具来确保其零件及子承包商零件的安全性，尽可能降低以产品责任风险。

All suppliers shall appoint and communicate a qualified PSR (Product Safety Responsible) contact person for KA, including emergency phone number (24/7) and e-mail. This appointed person shall be registered in KA supplier contact system and is shown in the supplier portal for suppliers. It is the responsibility of the supplier to ensure that KA has the correct information.

所有供应商应委任一名合格的PSR（产品安全负责人）并告知康斯博格，包括紧急联系电话（24/7）以及邮箱信息。该受委任人员应在康斯博格供应商联系系统中登记并将相关信息显示在供应商门户网站上。供应商应确保康斯博格获得正确的信息。

Safety parts are defined on KA drawings / specifications using the following criteria  
康斯博格图纸/规格中使用以下标准定义安全部件

- The part has one or more safety characteristic on the drawing / specification  
部件具有图纸/规格中的一项或多项安全特性
  - » Safety characteristics are denoted by [1D] (or other customer specific symbols – refer to notes on drawing)  
安全特性用[1D]表示（或其他客户特定的符号 - 参阅图纸注记）
- The part has ASIL requirements derived from functional safety (ISO 26262)  
部件具有源自功能安全（ISO 26262）的ASIL 要求
- The part is defined by KA customer as a 'safety part' on the drawing / specification  
部件由康斯博格客户在图纸/规格中定义为“安全部件”

Where the supplier is design responsible, safety characteristics / safety part status will be defined after discussion between KA and supplier design teams.

在供应商负责设计的情况下，安全特性/安全部件状态将由康斯博格与供应商的设计团队讨论后确定。

For all safety parts KA has the following additional requirements:





对于所有安全部件，康斯博格有以下附加要求：

### **Product Traceability 产品可追溯性**

- > Unique part marking that allows traceability throughout the supply chain (to raw material) linked to the manufacturing process confirming safety characteristic compliance. (for example a unique bar-code linked to a poke-yoke test of the safety characteristic).  
唯一的部件标识，允许在整个供应链中（到原材料）可追溯到制造过程，并确认其安全特性符合要求。（例如，与安全特性防错测试相关联的唯一条形码）
- > The position and method of the marking will be defined on the drawing / specification in consultation with the supplier/sub-suppliers where applicable.  
标识的位置和方法将在与供应商/分供应商（如适用）协商后在图纸/规格中确定。

### **Revalidation of Parts (Re-PPAP) 部件的再验证 (Re-PPAP)**

- > Refer to section 4.7.  
参见第 4.7 节。
- > Revalidation must be performed annually & information supplied to KA Manufacturing location(s).  
再验证必须每年进行一次，并向 KA 制造场所提供信息。

### **Error-proofing 防错**

- > The suppliers manufacturing process must include robust error-proofing preventing the opportunity for NOK parts to be shipped to Kongsberg. Wherever possible the process should prevent NOK parts from being produced, or if produced being moved to the next process stage.  
供应商的制造过程必须有完善的防错措施，以防止 NOK 部件被运至康斯博格。只要有可能，过程应避免 NOK 部件被生产，或如果生产则转移到下一个过程阶段。
- > Refer to VDA/AIAG FMEA manual.  
参见 VDA/AIAG FMEA 手册。

### **FMEA Process FMEA 流程**

- > The Suppliers FMEA process must show the potential impact on customers / end-users in evaluation of risks and actions.  
在评估风险和行动时，供应商 FMEA 流程必须显示对客户/最终用户的潜在影响。
- > Reverse FMEA shall be performed on the completed process to validate the FMEA.  
反向 FMEA 应在完整的流程上进行，以验证 FMEA。

### **Capability Studies 产能研究**

- > For safety characteristics the minimum acceptable Ppk for initial qualification is 2.0, and minimum acceptable Cpk for ongoing production is 2.0.  
对于安全特性，可接受的初始确认值最小 Ppk 为 2.0，对于持续生产可接受的最小 Cpk 为 2.0。
- > 100% poke-yoke check is preferred and always required if Ppk/Cpk is less than target value.  
如果 Ppk/Cpk 小于目标值，建议进行 100%防错检查，并始终要求进行

### **Identification within the Suppliers / Supply Chain Process 在供应商/供应链流程中的识别**

- > All packaging / containers used for parts within the process, all related documentation, manufacturing and checking equipment, signage and in process labelling must be clearly marked as safety ([1D] or as per drawing)  
生产过程中零件所用的所有包装/容器、所有相关文件、生产和检验设备、标志牌和生产过程中的标签必须清楚地标明安全标识（[1D]或按图纸）



## **Audit 审计**

- > VDA6.3 Audits (+ Customer required checks) are required prior to nomination.  
VDA6.3 在提名前必须进行审计（+客户要求的检查）。
- > A Process audit shall be part of the part approval process, including all parts of the supply chain with a direct influence on part quality relevant to the safety characteristic.  
流程审核应是零件批准程序的一部分，包括供应链中对与安全特性相关的零件质量有直接影响的所有零件。

## **Training 培训**

- > All personnel involved in the production of this part must be fully aware of the safety parts status and significance.  
所有参与该零件生产的人员必须充分了解安全零件的状态及重要性。
- > Supplier must demonstrate appropriate mechanisms to follow this requirement, including training of new personnel and refresher training as appropriate.  
供应商必须展示遵循这项要求的适当机制，包括新员工培训和进修培训（按适用情形）。

Any deviation from these minimum requirements needs to be agreed in writing with the KA project representative during the quotation.

对这些最低要求的任何偏离需在报价期间以书面形式与康斯博格项目代表达成一致。



## SECTION 5: NON-AUTOMOTIVE BUSINESS

### 第 5 部分：非汽车业务

#### 5.1 GENERAL 总则

All suppliers are expected to meet the quality standards expected from our customers. The requirements of this manual are applicable, regardless of the end user application, except as noted below.  
期望所有供应商达到对我方客户的质量标准。本手册的要求均适用，无需考虑任何最终用户应用，但下文指出的除外。

#### 5.2 SUPPLIER SELECTION AND APPROVAL 供应商的选择和批准

Suppliers are normally approved to supply for all Kongsberg customers. However in certain cases a restricted approval may be given so that the supplier may only supply specific items and / or to specific end user applications. This restricted approval prevents the supplier from quoting for any business outside of these approval conditions.

供应商通常被批准为所有康斯博格客户提供产品。但是，在某些情况下，可能给予限制性批准，以使供应商仅能供应特定的产品和/或向特定的最终用户供应产品。该限制性批准可防止供应商为不在这些批准条件范围内的任何业务进行报价。

#### 5.3 PART APPROVAL 零件批准

The Supplier Part Qualification (SPQ) is applicable to all business areas. For non-automotive parts some requirements marked as mandatory can be waived (for example AIAG minimum standard may not be applicable), but this must be agreed in writing during the supplier feasibility phase pre-business award as per SPQ process.

供应商零件合格检验（SPQ）适用于所有业务领域。对于非汽车零件，可以放弃某些强制性要求（例如 AIAG 最低标准可能不适用），但是必须在供应商可行性阶段根据 SPQ 程序，在业务授予前以书面形式约定。

#### 5.4 CUSTOMER SPECIFIC REQUIREMENTS 客户特定要求

Where industry specific requirements apply, this will be identified on the drawing / specification and/or during the feasibility / quotation phase. The supplier must ensure they understand and are able to fulfill these requirements prior to quoting for business (as per Supplier Feasibility / SPQ).

如果行业特定要求适用，将在图纸/规范中和/或可行性/报价阶段予以明确。供应商必须确保在业务报价之前理解并能够满足这些要求（根据供应商可行性阶段/SPQ）。

#### SUPPLIER NAME:

供应商名称:

*Supplier representatives*

*供应商代表人*

**DATE:**

日期:

**DATE:**

日期:

**QUALITY MANAGER NAME:**

质量经理姓名:

**CEO/PLANT MANAGER NAME:**

首席执行官/工厂经理姓名:

**SIGNATURE:**

签字:

**SIGNATURE:**

签字:



# CHANGE RECORD

## 变更记录

### **VERSION 2023 – CHANGES 2023 版本-变更**

- > Change from “Quality Action Plan” to “Supplier Part Qualification” in multiple sections  
将“质量行动计划”改为“供应商零件合格检验”多个部分
- > Clarified wording in multiple sessions  
多个部分的澄清措辞
- > Addition of Safety specific actions in 4.19  
增加 4.19 “安全”中的具体行动
- > Addition of Section 5 “Non-Automotive”  
增加第 5 条“非汽车业务”



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