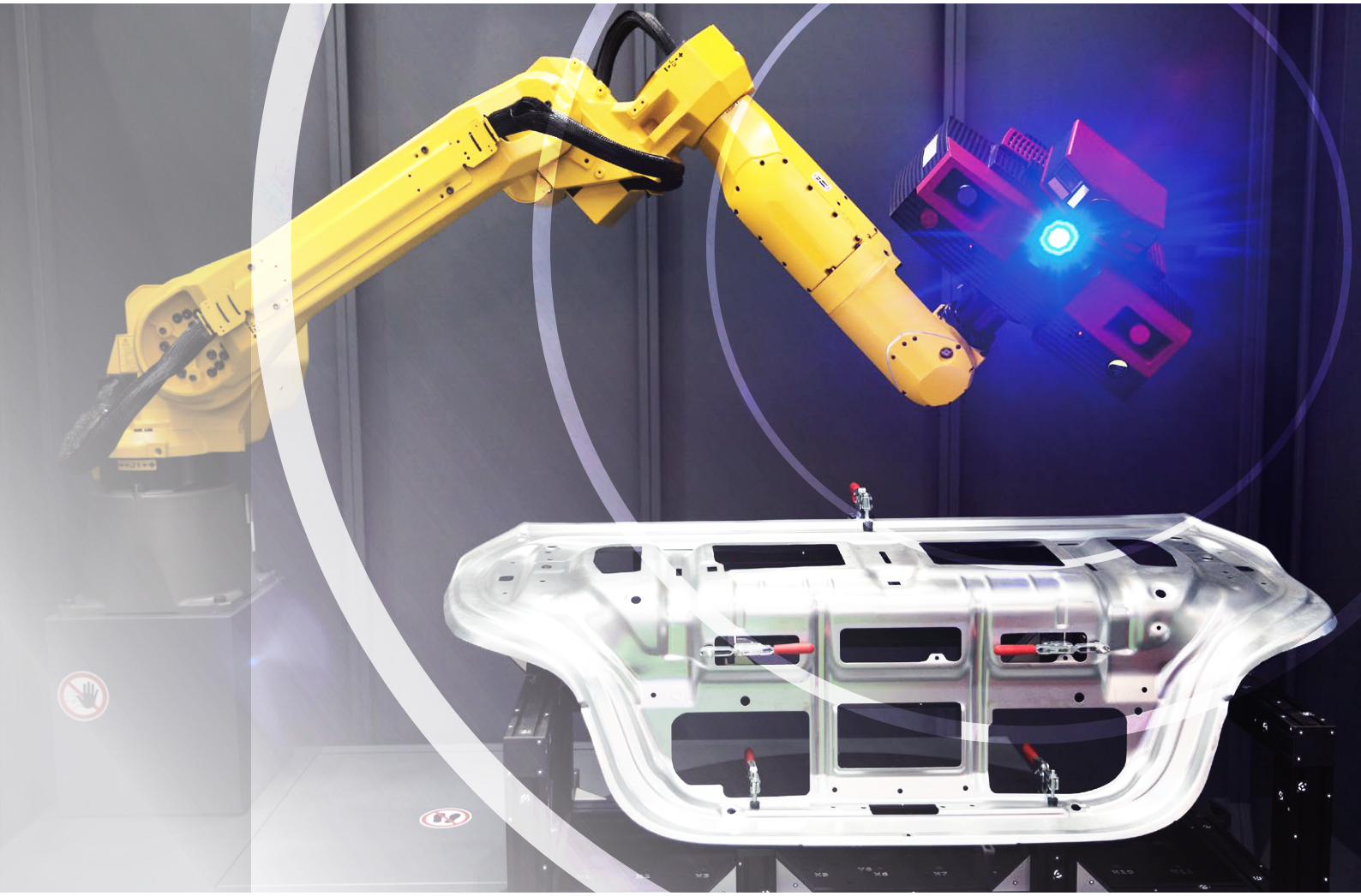
VDA QMC

德国汽车工业协会
质量管理中心中国分公司
CHINA

VDA 5: Measurement and inspection processes – Capability, Planning and Management

This is how to safeguard your inspection process management!



Editor

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Revised by

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The new VDA 5 (3rd, revised edition, July 2021) is a mandatory requirement for the German automotive industry and their supply chain. The VDA 5 define requirements to assure capable measurement systems. VDA 5 is different to MSA from AIAG (more details to the differences you will find at the end of this whitepaper).

Making reliable statements regarding the product quality

Inspection process management in companies in the automotive industry serves two main purposes:

- Taking the measurement uncertainty into consideration when using inspection results as a necessary prerequisite for the assessment of product safety and conformity
- Targeted use of inspection processes, taking into account the efficiency of production.

Inspection process capability involves more than just the release of the inspection equipment. It also encompasses dealing with measurement uncertainty in product and manufacturing design in order to prevent incorrect assessments of measurement results. Measuring systems and measurement processes must therefore be evaluated sufficiently and comprehensively, and the relevant influencing factors that may have an effect on the measurement result must be taken into consideration.

Reliable and correct measurement results form the basis of important decisions after the inspection, such as:

- Releasing or not releasing a manufacturing or measuring device
- Implementing of corrective measures during the manufacturing process
- Delivering, reworking or scrapping a product
- Correction values for the adjustment of tools and equipment.

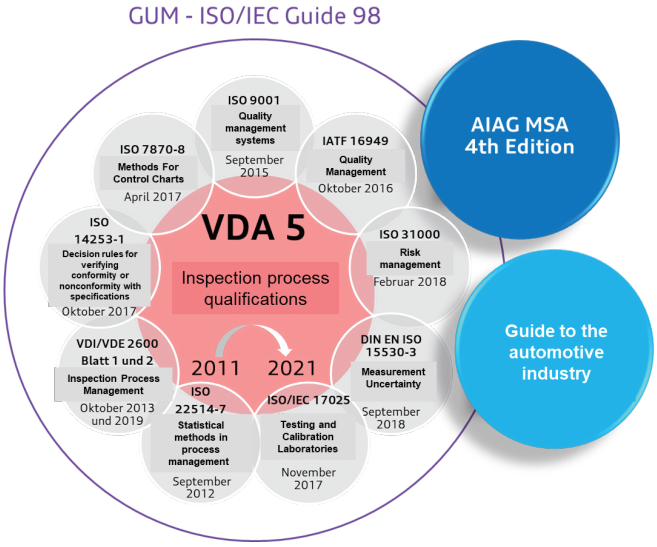
Erroneous decisions are prevented and the cost risk is reduced!

Inspection comes with many advantages and helps to uncover errors

Measurement and inspection processes are carried out throughout the entire product development process. Consistently implemented inspection process management comes with countless advantages and considerable benefits for the company:

- The liability risk is minimized thanks to fewer errors in inspection decisions.
- Capable and controlled measurement and inspection processes form the foundation for safeguarding an efficient and cost-effective procedure. Thus, decisive competitive advantages can be gained. Manufacturing costs are reduced due to less scrap and rework.
- The information gained supports the inspection process planning and production control to a large extent and makes a considerable contribution to the company's success.

Inspection process management must be regulated by means of well-established structures, procedures and responsibilities within the company.



More precise, more transparent, and more easily applicable

The third edition of "VDA 5 Measurement and inspection processes" was published in July 2021. The updated standard work shows how to meet the diverse requirements specified in standards and directives regarding the topic of inspection process management. The latest technical developments and changes relating to standards were also taken into account. In order to achieve better applicability for the user in practice, the focus was on methodology when drawing up this volume. The idea behind the volume is to provide an overview as complete as possible to handle the proof of capability for measurement processes. This volume also aims to describe a standardized and practical procedure for the determination and consideration of the extended measurement uncertainty.

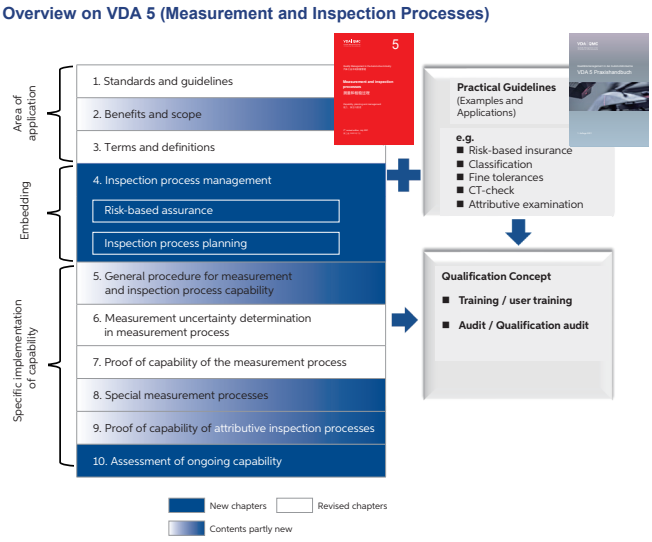
What's new?

- Setting the main focus on inspection process planning as well as process transparency – from the planning of the measuring system up to the capability of the measurement and inspection processes
- Early integration of inspection process planning and capability of inspection processes/inspection systems into the development process for the purpose of verifying and validating special characteristics within the framework of system engineering
- Taking a holistic view of inspection process management, including the definition of roles
- Transferability of proof of capability
- Specification of terms and definitions in line with international standards
- Risk-based approach
- Strategies for harmonization with AIAG-MSA
- Recommendations for the procurement of measuring systems (e.g. specifications) and handling of unsuitable measuring systems/measurement processes
- Handling of fine tolerances
- Procedure for small pre-series and production lots in development and production
- Consideration of the processes and assessment of continuous capability using stability measurements
- Current state of knowledge regarding attributive inspection.

The VDA QMC offers both face-to-face and live online training courses on the subject of "VDA 5 – Measurement and inspection processes".

VDA 5 v.s. MSA

VDA 5 is very different to MSA from AIAG, see below comparison:



Outlook: "VDA 5.x"

Besides the practical handbook as a supplement to VDA Volume 5, with examples and case studies for the individual topics, further VDA volumes relating to measurement and inspection will be revised and compiled:

- VDA 5.1 Traceable Inline Measuring Technology
- VDA 5.2 Inspection Process Management for Static Torques on Bolted Joints
- VDA 5.3 Optical Measurement and Testing Processes

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