

Industrial Keynote

Are my parts safe? Quality control in AM

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Advanced manufacturing technologies like Additive Manufacturing (AM) are promising a substantial improvement in terms of production costs, part weight and freedom of design. This makes the new technologies highly attractive for all high-performance sectors from aerospace to automotive. As AM has matured into a viable manufacturing option in the recent years, business-plans are becoming more attractive. Now is the time to take a close look at the complete process chain to assess risks and potential obstacles before substantial investments are made. An often-overlooked aspect is the quality control and qualification of parts produced by AM processes. Are internal quality standards fit for the new manufacturing processes?

Is the right inspection equipment in place and does the team possess the right qualification? Is the part design suited for an effective inspection? These are questions that must be asked early on and must be addressed professionally – especially in safety-critical environments. A failure to do so could lead to severe complications at a stage where significant amounts of resources have been already invested. This presentation will provide an overview about the quality challenges related to Additive Manufacturing through a set of representative examples. It will highlight key aspects to consider when making design choices. “Design to manufacture” is well known in the field of AM design, but “Design for inspection” is equally important. Engineers, managers, and designer will get guidance on available inspection options and quality standards. Advanced manufacturing and especially AM are great technologies with an amazing potential. Addressing quality and qualification related obstacles early on will ensure that your projects will be successful and help to prevent costly failures.

AUTHOR’S STATEMENT

Conflict of interest: Lennart Schulenburg is CEO of VisiConsult X-ray Systems & Solutions GmbH, Stockelsdorf, Germany. Informed consent: Informed consent has been obtained from all individuals included in this study.