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Cleanliness an underestimated area when solving problems on Safety Critical Aerospace parts

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Cleaning is a method that has standards and specifications within Aerospace industry of how to fulfil a cleaning requirement with respect to a certain material. Nevertheless, it is an area where underlying technical problems tend to be of an intermittent and long-term nature. Cause and effect-wise relationships are hard to derive that makes the problem solving more of a guessing game. The lack of understanding of the underlying mechanisms of how the cleaning method is interacting with the material, is limiting the C&E-analysis and makes it almost impossible to reach common understanding of how-to priorities improvement initiatives in the cross functional product team. This is even further hampered by the lack of a precise measurement system and standardized procedures of how to evaluate the capability of the measurements relative cleaning variations on a regular basis. A measurement system including visualization methods that not only detects bad performances of the cleaning method but is also monitors its nominal performance within limits over time, that is, control limits.

In this presentation a technical cleanliness problem related to background fluorescence on a safety critical aero engine part is shown. The background fluorescence limits the inspectability of the part, and further cleaning must be done on the part in order to make it possible to inspect the part. The fuzzy origin and different hypothesis are discussed, and the way to attack the difficulty of measurement problem is also discussed.

Keywords

Six Sigma, measurement system, problem solving, safety

Special/invited session

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