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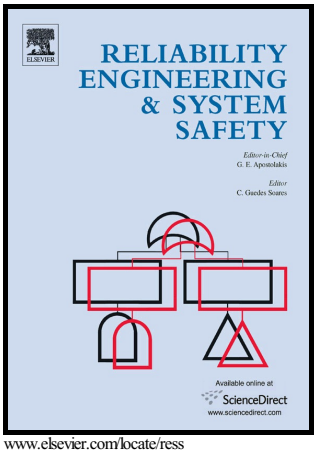

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A Structured Hazard Analysis and Risk Assessment Method for Automotive Systems - A Descriptive Study

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PII: S0951-8320(16)30500-2
DOI: http://dx.doi.org/10.1016/j.ress.2016.09.004
Reference: RESS5642

To appear in: *Reliability Engineering and System Safety*

Received date: 22 July 2016
Revised date: 1 September 2016
Accepted date: 14 September 2016

Cite this article as: Kristian Beckers, Dominik Holling, Isabelle Côté and Deni Hatebur, A Structured Hazard Analysis and Risk Assessment Method for Automotive Systems - A Descriptive Study, *Reliability Engineering and System Safety,* http://dx.doi.org/10.1016/j.ress.2016.09.004

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A Structured Hazard Analysis and Risk Assessment Method for Automotive Systems - A Descriptive Study

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Accepted manuscript

Abstract

The 2011 release of the first version of the ISO 26262 standard for automotive systems demand the elicitation of safety goals following a rigorous method for hazard and risk analysis. Companies are struggling with the adoption of the standard due to ambiguities, documentation demands and the alignment of the standards demands to existing processes. We previously proposed a structured engineering method to deal with these problems developed in applying action research together with an OEM. In this work, we evaluate how applicable the method is for junior automotive software engineers by a descriptive study. We provided the method to 8 members of the master course *Automotive Software Engineering (ASE)* at the Technical University Munich. The participants have each been working in the automotive industry for 1 to 4 years in parallel to their studies. We investigated their application of our method to an electronic steering column lock system. The participants applied our method in a first round alone and afterwards discussed their results in groups. Our data analysis revealed that the participants could apply the method successfully and the hazard analysis and risk assessment achieved a high precision and productivity. Moreover, the precision could be improved significantly during group discussions.

Keywords: requirements, ISO 26262, automotive, safety, structured method, empirical study

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