Automatic Decomposition and Allocation of Safety Integrity Level Using System of Linear Equations

Titre	Automatic Decomposition and Allocation of Safety Integrity Level Using System of Linear Equations
Type de publication	Communication
Type	Communication avec actes dans un congrès
Année	2014
Langue	Anglais
Titre du colloque	PESARO 2014, The Fourth International Conference on Performance, Safety and Robustness in Complex Systems and Applications
Titre des actes ou de la revue	PESARO 2014, The Fourth International Conference on Performance, Safety and Robustness in Complex Systems and Applications
Pagination	1–5
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Pays	France
Editeur	IARIA
Ville	Nice
ISBN	978-1-61208-321-6
Mots-clés	asil decomposition [5], ISO 26262 [6]
Résumé en anglais	In ISO-26262, the Automotive safety integrity level (ASIL) represents the degree of rigour that should be applied in the development, implementation and verification of a requirement in order to reduce and control the risk in the final product. The ASILs are allocated to the safety requirements which are inherited by the subsystems and components in a hierarchical approach. During the allocation process, the safety requirements could be decomposed over redundant elements. It is referred to as ASIL decomposition and is an important feature, as it helps to reduce the complexity and the development cost of the design. The decomposition could lead, however, to different allocations. In this paper, we propose an approach to find all the possible allocations in order to assist the analyst in reaching the optimal allocation.
URL de la notice	http://okina.univ-angers.fr/publications/ua5310 [7]
DOI	10.13140/2.1.2856.0321 [8]
Lien vers le document en ligne	http://www.thinkmind.org/download.php?articleid=pesaro_2014_1_10_60029 [9]

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