The MODUS approach to formal verification

Background: Software reliability is of great importance for the development of embedded systems that are often used in applications that have requirements for safety. Since the life cycle of embedded products is becoming shorter, productivity and quality simultaneously required and closely in the process of providing competitive products. Objectives: In relation to this, MODUS (Method and supporting toolset advancing embedded systems quality) project aims to provide small and medium-sized businesses ways to improve their position in the embedded market through a pragmatic and viable solution. Methods/Approach: This paper will describe the MODUS project with focus on the technical methodologies that can assist formal verification and formal model checking. Results: Based on automated analysis of the characteristics of the system and by controlling the choice of the existing opensource model verification engines, model verification producing inputs to be fed into these engines. Conclusions: The MODUS approach is aligned with present market needs; the familiarity with tools, the ease of use and compatibility/interoperability remain among the most important criteria when selecting the development environment for a project.

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