Improving Code Quality in PLC Programming

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Abstract

In the last decades state of the art software technology has transformed extremely. Programming languages and paradigms tended to turn away from low level codes and from hardware details to focus on high level concepts like interactions of objects or service oriented solutions. Still low level programming is widely used, especially in the automotive industry. The automation of electromechanical processes (such as machinery control of assembly lines) require highly customized systems. Programmable Logic Controls (PLC) serve this purpose. The programming languages defined for programmable control systems emphasize logical organization of operations. However, because of the special characteristic of PLC programming, and according to its detachment comparing to classical software construction, the development tools and best-practices of this segment are often behind of the abovementioned, modern techniques. Considering the lifespan of a PLC program (5-10 years at least), the high pressure on development time, and the price of a possible maintenance downtime, it is crucial to define a systematic approach to build correct systems in decent time frame. In this paper we overview the current aspirations to create consistent PLC programs, and present new ideas to improve code quality in PLC programming.

Keywords: Software development, Code quality, PLC

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References
