

Title of Article: Application of an Extended SysML Requirements Diagram to Model Real-Time Control Systems

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Outlet: Lecture Notes in Computer Science

Date:

Abstract: Most techniques for modeling requirements present many problems and limitations, including modeling requirements at a single level of abstraction, and are specific to model functional requirements. The objective of this article is to perform a study on modeling requirements of Real-Time Systems through an extension of the SysML Requirements Diagram focusing on the traceability of non-functional and functional requirements. The proposed approach has demonstrated to be effective for representing software requirements of real-time systems at multiple levels of abstraction and classification. The proposed metamodel represents concisely the traceability of requirements in a high abstraction level.