Concurrent Engineering and Robot Prototyping

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Abstract

This report addresses the theoretical basis for building a prototyping environment for electro-mechanical systems using concurrent engineering approach. In Designing a robot manipulator, as an example of electro-mechanical systems, the interaction between several modules (S/W, VLSI, CAD, CAM, Robotics, and Control) illustrates an interdisciplinary prototyping environment that includes different types of information that are radically different but combined in a coordinated way. We propose an interface layer that facilitates the communication between the different systems involved in the design and manufacturing process, and set the protocols that enable the interaction between these heterogeneous systems to take place.