

Interoperability of Assembly Analysis Through the Use of the Open Assembly Design Environment

ABSTRACT: The emergence of high performance computing has opened up new avenues for the design and analysis community. Integrated Product/Process Design techniques are allowing multi-functional teams to simultaneously optimize the design of a product. These techniques can be inhibited, however, due to software integration and data exchange issues. The work outlined in this paper focuses on these issues as they relate to the design and analysis of electromechanical assemblies. The first effort of this work is the creation of an open environment, called the Open Assembly Design Environment. The goal of this environment is to integrate the otherwise disparate assembly design tools using a central control system and a common set of data. These design tools include virtual reality based design systems, CAD systems, DFA systems and process planning systems. This paper will outline the overall goals of the project, present the architecture designed for the system, describe the interfaces developed to integrate the systems, and discuss the data representation requirements for a system integrating a virtual reality system with CAD systems. **KEYWORDS:** Assembly Design, Integrated Product/Process Design, Open Systems, STEP, Virtual Assembly