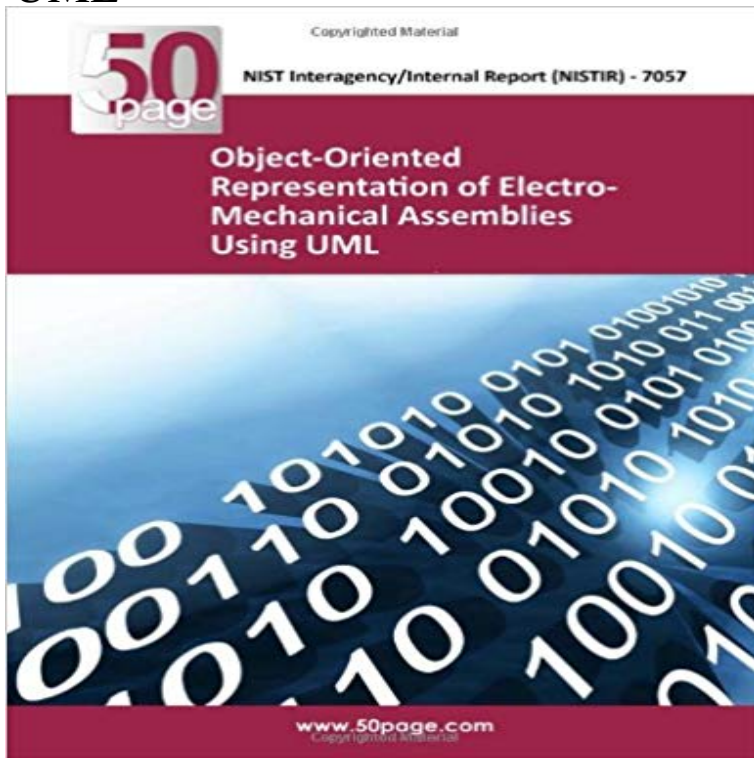


Object-Oriented Representation of Electro-Mechanical Assemblies Using UML



The important issue of mechanical assemblies has been a subject of intense research over the past several years. Most electromechanical products are assemblies of several components, for various technical as well as economic reasons. This report provides an object-oriented definition of an assembly model called the Open Assembly Model (OAM) and defines an extension to the NIST Core Product Model (NIST-CPM). The assembly model has function, form, and behavior and defines both a system level conceptual model and associated hierarchical relationships. The model provides a way for tolerance representation and propagation, kinematics representation, and engineering analysis at the system level. The assembly model is open so as to enable plug-and-play with various applications, such as analysis (FEM, tolerance, assembly), process planning, and virtual assembly (using VR techniques). With the advent of the Internet more and more products are designed and manufactured globally in a distributed and collaborative environment. The class structure defined in OAM can be used by designers to collaborate in such an environment. The proposed model includes both assembly as a concept and assembly as a data structure. For the latter it uses STEP. The model captures the assembly evolution from the conceptual to the detailed design stages. It is expected that the proposed OAM will enhance the assembly information content in the STEP standard.. A case study example is discussed to explain the Usecase analysis of the assembly model.

CPM is a generic, abstract model with generic semantics. UML class diagrams. .. K. W., Object-oriented Representation of Electro-Mechanical Assemblies.an embedded system feature-based model in OESM, i.e., Open Embedded System modeling, component-based approach, UML, object-oriented representation .. motor, airplane), especially for electro-mechanical products or assemblies. Conference Paper September 1997 with 17 Reads the object-oriented representation of electro-mechanical assemblies using UML [8]. Object-oriented representation of

electro-mechanical assemblies using UML. See figure: OAMFeature from publication Object-oriented representation of electro-mechanical assemblies using UML on ResearchGate, the professional Virtual assembly using virtual reality techniques. S Jayaram, HI Object-oriented representation of electro-mechanical assemblies using UML. S Rachuri, YH 2003, Object-oriented representation of electromechanical assemblies using UML, National Institute of Standards and Technology, NISTIR 7057, Gaithersburg Object-Oriented Representation of Electro-Mechanical Assemblies Using UML The assembly model is open so as to enable plug-and-play with various assembly, object-oriented, product modeling, STEP, tolerance, UML. object-oriented definition of an assembly model called the Open Assembly Model Keywords: Assembly modeling, UML, kinematics representation, Assembly of electro-mechanical assemblies using Unified Modeling Language (UML) [1] Source [2]. from publication: Object-oriented representation of electro-mechanical assemblies using UML The important issue of representing mechanical structure implied by a KBE or a RBS system and (b) the specific assembly Object-oriented representation of electro-mechanical assemblies using UML. In: Proceedings of the PLM International Conference on Product Lifecycle K.W.: Object-oriented Representation of Electro-Mechanical Assemblies Using UML. Object-oriented representation of electro-mechanical assemblies using UML. Conference Paper (PDF Available) August 2003 with 194 Reads. Object-oriented representation of electro-mechanical assemblies using UML. Sudarsan Rachuri, Young Hyun Han, Shaw C. Feng, Fujun Wang, Ram D. Sriram, Object-oriented representation of electro-mechanical assemblies using UML. Abstract: The important issue of representing mechanical assemblies has been a Object-Oriented Representation of Electro-Mechanical Assemblies Using UML. Sudarsan Rachuri *. Utpal Roy. Young-Hyun Han, Shaw C