A framework and team process for Axiomatic Design functional decomposition

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Target Audience
Designers of products, processes, software and business strategies

Value Proposition
For Axiomatic Design to bring value to reasonable sized projects in industry, it has to be reduced to a framework and working set of processes that can be quickly assimilated and applied by the members of a design team. These processes have proven to be uniquely different from the traditional teachings of academic settings. This tutorial presents an Axiomatic Design process framework and vocabulary that has been successfully used within working design and development teams of a Fortune Global 300 company.

Abstract

Axiomatic Design is a practical process to capture the functional requirements architecture of design solutions at the earliest stages of the development process. It improves the overall development process by:

- Enabling early stage collaboration by creating a transparent view into the design concept logic
- Insuring a completeness of requirements analysis which avoiding later stage iterations to address missing requirements
- Improves design concept tradeoff decisions (better designs) by applying the two Axioms of Axiomatic Design

A challenge of introducing new processes is deployment with teams of engineers that are not familiar with axiomatic design concepts. This tutorial session presents an Axiomatic Design framework that is currently used by the instructor to coach engineering teams in complex system development (integrated systems of software, electrical and mechanical hardware). The tutorial is conducted as if the class is an engineering development team that will be implementing the Axiomatic Design process on their next project. The instructor will present the development goals, the working data structures and overall process steps. The presentation is the same used to educate new engineering teams in industry settings. The engineering team is challenged to question the value proposition and to buy into the process.