CONCURRENT ENGINEERING

CONTEMPORARY ISSUES AND
MODERN DESIGN TOOLS

Edited by

HAMID R. PARSAEI AND
WILLIAM G. SULLIVAN

CHAPMAN & HALL

To our parents,
Abolfazl Parsaei and Barat Atabaki,
William H. Sullivan and Kathleen A. Glasstone

Concurrent Eng

Contemporary iss
modern design

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CHAPTER 8

A decision-based approac[...]
concurrent design

Farrokh Mistree, Warren Smith and Bert [...]

Modern, computer-based concurrent design requires a holistic [...] integrates the representation, management and processing [...] Integration is possible through the 'standardization' of inform[...] ment within a design process. We approach standardiza[...] perspective of decision-based design (DBD), namely, that 'the p[...] an engineer, in the design of an artifact, is to take decision[...] decisions are foundational, we enable concurrent design proces[...] simultaneous analysis, synthesis and resolution of multiple d[...]

In this chapter, we introduce the fundamental paradigms [...] describe a decision-based design methodology called the de[...] problem technique (DSPT). Specifically, we start by providin[...] ground and by stating the axioms needed to characterize [...] decision support problems (DSPs). Introduced next is the for[...] semantics of DSPs. This generic protocol ensures the appli[...] DSPT across varying domains of application by providing [...] structured mappings between the designers' view of the v[...] particular syntax needed to facilitate solution. Finally, we [...] examples from marine design to explicate our approach.

8.1 SHIP DESIGN CASE STUDIES – NOMENCL[...]

Variables:

L	or LBP	length between perpendiculars in meters
B	or BEAM	ship design beam in meters
T	or DRAFT	ship design draft in meters
D	or DEPTH	ship design depth in meters
C_b	or CB	block coefficient (ship's hull) $= \dfrac{\text{Displaced v[...]}}{L \times B \times [...]}$

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