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Guide to Modeling and Simulation of Systems of Systems

DEVS Simulation Protocol

Abstract

One of the hallmarks of DEVS modeling and simulation is its fundamental separation of models from the simulation engines that execute them. The alternative, which is more common in today's practice, is not to enforce such a clear separation and to indiscriminately mix constructs that relate to the model with those that relate to how it is being executed.

This chapter discusses the fundamental separation of models from the simulation engines that execute them intrinsic to the DEVS framework. This leads to a layered architecture of modeling and simulation services that provides the basis for simulating DEVS coupled models that are created in a DEVS modeling environment. We use MS4 Me™ to describe the operation of the DEVS Simulation Protocol in terms of its interface requirements. We show how different implementations can satisfy the protocol using multi-aspects and uniform coupling patterns, which also illustrated the application of modeling concepts introduced earlier in the book. In addition, there is a discussion of how a typical event-based simulator can be simulated with the DEVS protocol and that casts light on the requirements for interoperability among DEVS and non-DEVS simulators.
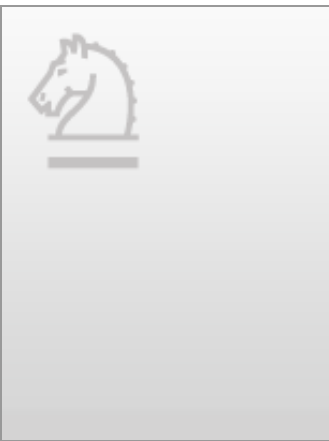
Within this Chapter:

1. DEVS Simulation Protocol

2. MS4 Me Exposition of the DEVS Simulation Protocol

Related Content

References (8)

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Title
DEVS Simulation Protocol
Book Title
Guide to Modeling and Simulation of Systems of Systems
Pages
pp 105-124
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