

# NET CENTRIC MODELLING AND SIMULATION USING ACTORDEVS

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## ABSTRACT

The goal of the DEVS-World project is the development of a net-centric modelling and simulation (NCMS) infrastructure having the net as *the* computer, thus favouring different levels of interoperability among research groups operating world wide. This paper proposes an architecture based on web services for NCMS using ActorDEVS. ActorDEVS is a lean and efficient agent-based framework in Java supporting modelling of Parallel DEVS systems under both centralized and distributed simulation. ActorDEVS supports custom control engines. The paper discusses some architectural scenarios for wrapping ActorDEVS in the DEVS-World infrastructure, opening to interoperability with other DEVS or (possibly) non-DEVS systems. The proposal clearly separates model and simulation concerns. An entire model is partitioned among a number of simulation nodes with web services, in a case, which act as the transport layer for inter-node message exchanges. A global coordinator with a minimal interface of operations governs the “in-the-large” simulation aspects.

Keywords: M&S using the Internet, agent-based DEVS, web services, interoperability

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