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Orchestrating the interoperability workflow within a transport simulation platform (Conference Paper)

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Abstract

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The domain of logistics and transport is now gaining with the use of the web, geo positioning and RFID to improve the tracking and decision making for the product more appropriate routing in order to save time, cost and reduce impact on the environment. The combination of these software and hardware devices faces interoperability problems. This paper proposes to introduce a new simulation platform that will mix interaction with real world including sensor and human interfacing and simulation world. In detail, the proposition of this paper is to combine the Taverna Workflow, which handles and triggers the call of web services proposed by a platform, with several simulation models. In particular one drawback of several workflows orchestrator tools is that they do not provide time management facilities to handle time and to rhythm simulation run. This paper introduces a message clock ordering solution defined by G-DEVS models to give the beat to the transport simulation workflow system. The imbrication of G-DEVS modelling and simulation with the workflow Taverna shows the possibility of the interoperability and complementarity of these approaches.

Author keywords

Discrete event simulation; G-DEVS; Interoperability; Taverna; Workflow

Indexed keywords

Engineering controlled terms: Discrete event simulation; Radio frequency identification (RFID); Web services

G-DEVS; Impact on the environment; Modelling and simulations; Simulation platform; Software and hardwares; Taverna; Transport simulation; Workflow

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