

Hypergraph for System of Systems modeling

Authors : Haffaf Hafid

Abstract : Hypergraphs, after being used to model the structural organization of System of Systems (SoS) at macroscopic level, has recent trends towards generalizing this powerful representation at different stages of complex system modelling. In this paper, we first describe different applications of hypergraph theory, and step by step, introduce multilevel modeling of SoS by means of integrating Constraint Programming Languages (CSP) dealing with engineering system reconfiguration strategy. As an application, we give an A.C.T Terminal controlled by a set of Intelligent Automated Vehicle.

Keywords : hypergraph model, structural analysis, bipartite graph, monitoring, system of systems, reconfiguration analysis, hypernetwork

Conference Title : ICORES 2015 : International Conference on Operations Research and Enterprise Systems

Conference Location : Tokyo, Japan

Conference Dates : May 28-29, 2015