Abstract

A simulation of a dynamic ecosystem such as the smart city can test new concepts for reducing energy consumption. Research related to energy management can be divided into two categories: predictive control (anticipative) and adaptive control (reactive). A new energy management system of a building (BEMS) which is the chosen system to validate treats a long-term anticipative control and introduces a reactive control that adds another level of intelligence to the BEMS. This work is focused on modeling and simulation of this system using the formalism (DEVS). Our motivation is explained by the fact that DEVS is a tool for modeling of discrete event systems and it decomposes the overall system into subsystems in order to facilitate the achievement which is consistent with the characteristics of multilayer architecture of the chosen system.


Index Terms

Computer Science

Applied Sciences
**Keywords**

Smart city  a Building Energy Management System (BEMS)  Reduction of energy consumption  Multilayer Architecture  Modeling and Simulation  The formalism DEVS.