Introduced by B.P. Zeigler in the early 70’s: formalism for modeling different codes through a given myth already obtained the behavior of the components involved in the ambient system to be with DEVS, a model of a large system can be decomposed into smaller DEVS defines two kinds of models: atomic and coupled models describe how to couple several component models to the definition of a variable structure DEVS modeling scheme to algorithm Simulator for DEVS integrates the simulation of applications in ubiquitous computing Early efficient An Artificial Neural Network (ANN) representation in DEVS that enabled a modular optimization (architecture, learning algorithms) An efficient ANN configuration based on comparative and concurrent simulations Early efficient fault detection in Wound-Rotor Induction Machine (WRIM) using DEVS and ANN • Introduced by B.P. Zeigler in the early 70’s: formalism for modeling discrete-event systems in a hierarchical and modular way • With DEVS, a model of a large system can be decomposed into smaller component models with coupling specification between them • DEVS defines two kinds of models: atomic and coupled models (i) atomic models represent the basic models providing specifications for the dynamics of a sub-system using function transitions; (ii) Coupled models describe how to couple several component models together to form a new model • DEVS provide an automatic simulation based on time synchronization and message propagation • DEVSimPy integrates extensions of DEVS allowing to deal with numerous applications

DEVS Models work with an infinite number of states which is useful for numerical integration • QSS (Quantized State System) use a quantization function to transform a continuous system into a DEVS system with piecewise constant input and output trajectories • BFS DEVS (Behavioral Fault Simulator for DEVS) use a concurrent and comparative algorithm

The main problem is to propose a management adapted to the composition of applications in ubiquitous computing • We propose the definition of a modeling and simulation scheme based on a discrete-event formalism in order to specify at the very early phase of the design of an ambient system: • the behavior of the components involved in the ambient system to be implemented; • the possibility to define a set of strategies which can be implemented in the execution machine

The DEVS formalism involving the analysis of myths: the Structural Anthropology: Myth Analysis • In 1955 C. Levi Strauss introduced the Structural Anthropology Theory applied to Myth Analysis • Claude Levi Strauss explained in his books how the meaning of a given myth can emerge from a set of transformations between myths through generation of myths and interpretation according to different codes

DEVSImPy-Mob • Multi-platforme mobile application aimed to manage discrete event simulations obtained from DEVS models associated with connected objects such as board computers, sensors, controllers or actuators.