Software Product Line for Pervasive Systems

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Introduction

- Pervasive Systems: The new way of interaction between human beings and computers.
- Pervasive systems introduce another approach of communication as the technologies get diffused in our daily life without the feeling of their existence.
- Current implementation is dependent on ad-hoc or frameworks – not scalable and unable to evolve.
Software Product Line (SPL)

- Shorter time to market with improved productivity.
- It is dependent on the concept of reusability.
- Domain Engineering and Application Engineering are the fundamentals of SPLE
SPL in Pervasive Systems

- based on Model Driven Development (MDD) and variability modeling principles [5].
- Most of the presented works are not sufficient because:
  - The evolution process is not carried out in automatic way (requires connection to SPL)
  - Pervasive systems are error-prone
  - Pervasive systems are heterogeneous.
SPL in Pervasive Systems

- The architecture of the framework for pervasive system [4]:
  - **User interface layer:** for accessing system services
  - **Logical layer:** Services for supporting the functionality specified in the models and the services for the management of the system execution
  - **Communication layer:** for managing the physical or logical environment.
Problem Definition

- Pervasive systems are hard to develop due to the hardware heterogeneity, dynamism of the application environment and the difficulty of the application evolution. Current approaches for building pervasive systems using software product lines are either lacking the full optimization of SPL techniques or too abstract and generic to get into the details of pervasive systems architecture.
Motivation and Objective

- Extend the existing software product line that deals with pervasive systems in order to enrich pervasive systems with a concrete platform.

- Evaluation criteria for the presented platform or framework.
elated Works


Questions