A Case Studies Approach to the Analysis of Profiling and Framing Structures for Pervasive Information Systems

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ABSTRACT

Model-Based/Driven Development (MDD) constitutes an approach to software design and development that potentially contributes to: concepts closer to domain and reduction of semantic gaps, automation and less sensitivity to technological changes, and the capture of expert knowledge and reuse. The widespread adoption of pervasive technologies as basis for new systems and applications lead to the need of effectively design pervasive information systems that properly fulfil the goals they were designed for. This paper presents a profiling and framing structure approach for the development of Pervasive Information Systems (PIS). This profiling and framing structure allows the organization of the functionality that can be assigned to computational devices in a system and of the corresponding development structures and models, being. The proposed approach enables a structural approach to PIS development. The paper also presents two case studies that allowed demonstrating the applicability of the approach.

Keywords: Architecture, Framework, Information Systems, Model-Based/Driven Development (MDD), Pervasive, Pervasive Information Systems (PIS), Process, Software Engineering, Ubiquitous

INTRODUCTION

The dissemination of computing and heterogeneous devices and platforms, the high pace of technological innovations and volatile requirements, the size and complexity of software systems characterize the software development context today. This context challenges the way software is developed for emerging forms of information systems. Software Development Processes (SDPs), as well as generalized adoption of models, are fundamental to efficient development efforts of successful software systems.

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