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"Uma Proposta para Integração de Protocolos de Localização de Serviços em Computação Ubíqua e Pervasiva"

In this dissertation, initially we introduce the fundamentals of ubiquitous and pervasive computing. Then, we survey several technologies used for representation and localization of services in this context. We begin with the SLP (Service Location Protocol), an open, simple and earlier technology. Next, we consider Jini and UPnP (Universal Plug and Play) two more recent but proprietary technologies. Finally, we consider UDDI (Universal Discovery, Description and Integration), a later technology, proposed as a standard integrated in the web service concept framework.

In the sequel, we realize a study comparing the representations of services capabilities of SLP, Jini and UPnP to those provided by WSDL (Web Services Description Language), a language used in the context of the UDDI technology to describe available services. Based on this study, we propose mappings between the service representations used in each previously surveyed technology and the corresponding service representations in WSDL. In particular, we investigate how to use WSDL to represent some useful capabilities of the other analyzed technologies.

In addition to issues related to standards for service representation, we discuss aspects related to the storage of their description information as registers of UDDI repositories. In this regard, we provide guidelines to help to specify the mappings of WSDL descriptions to UDDI repository registers. We also propose some minimal extensions to UDDI and WSDL to allow localization of services based on generic attributes.

Finally, we discuss relevant practical issues related to our proposal for service integration and demonstrate how it can be used to invoke services originally available in SLP, Jini or UPnP.