Mobile Agent for Locating Software Components

Fathy E. Eassa and Salem S. Alnahdi

King Abdulaziz University, Jeddah, Saudi Arabia
e-mail: { Feissa, Salnahdi}@hotmail.com

ABSTRACT. *Components reuse* is one of the most promising ways for software reuse. The huge increase in the use of the *World Wide Web* (*WWW*) has accelerated opening reuse repositories on the Internet. However, the existing document search engines are not proper for *component-based software* on the WWW, because they usually conduct HTML based, keyword search.
This work introduces a *mobile agent* system that applies component search based on the *component description manager* (CDM), which is a framework to classify components.

1. Introduction

In the light of global connectivity and increasing communication options available for accessing and exchanging information the vision for future communications is "information anytime, any place in any form", based on the idea of an open "electronic" market of services, where an unlimited spectrum of communication and information services will be offered, ranging from simple communication services up to complex distributed multimedia applications. In this context the instant provision of services and the customization and configuration of existing services become fundamental issues [1].

In this context the term *Intelligent Agent* (*IA*) has become a buzzword in the last years. The reason for this increasing interest originates from the progressing convergence of computing and telecommunications, where in particular the recent advances in the field of mobile/portable computing and personal teleeommunications are major drivers. Today agent technology is considered in a wide range of application areas, where agents substantially differ in the functionality provided [1].

In general, the IA ranges from adaptive user interfaces, known as *interface agents,* to communities of *intelligent processes* that cooperate with each other to achieve a common task; *cooperative agents*. Additionally, as *mobile agents* representing transportable or even active objects, they may move from one system to another to access remote resources or even meet other agents and cooperate with them. This last category in particular enables the concept of *remote programming*, which is regarded a basic driver of agent technologies. Remote programming is considered as an alternative to the traditional *Client/Server programming* based on the *Remote Procedure Call* (*RPC*) paradigm [1], see Figure (1).