# Task Computing

Yannis Labrou and Ryusuke Masuoka
Fujitsu Laboratories of America, Inc.
8400 Baltimore Avenue, Suite 302
College Park, MD 20740-2496, U.S.A
{yannis,rmasuoka}@fla.fujitsu.com

## Description

This demo complements the paper, "Task Computing – the Semantic Web meets Pervasive Computing," which has been accepted for ISWC2003 (Industrial Track #202).

Task computing is a new paradigm for how users interact with devices and services that emphasizes the tasks that users want to accomplish while using computing devices rather than how to accomplish them. Task computing fills the gap between what users want to do and the devices and/or services that might be available in their environments. Task computing presents substantial advantages over traditional approaches, such as the current personal computing paradigm, namely, it is more adequate for non-expert computer users, it is a time-saver for all types of users and is particularly suited for the emerging pervasive computing type of computing environments.

We call "Task Computing Environments (TCE)," a framework that support task computing, by providing support for its workflows, semantic service descriptions, and service management for end-users.

Our Task Computing Environment (TCE) consists of Task Computing Clients (TCC), which we call STEER (Semantic Task Execution EditoR), multiple Semantically Described Services (SDS's), Semantic Service Discovery Mechanisms (SSDM's), and Service Controls.

We base our technology on standards as much as possible. For example, we use a web client for STEER's user interface, UPnP [1] for SSDM, DAML-S [2] for semantic service descriptions, UPnP and Web services for service invocations. By combining these existing technologies in a framework that enables user-driven discovery, composition and execution of complex tasks, in real-time (as opposed to design time) task computing provides a totally different level of interoperability between devices and services, along with a novel user experience.

In the demo, for example, the user can display her slides from her own computer or the remote web service result on any display in the environment or use the environment to share information with other users (even after the first user left the environment!). Such a universal and flexible task computing framework proves, we believe, to be very useful and powerful in environments like hospitals, offices, and homes where the end-user can integrate and manipulate seamlessly functionalities on her own computer, devices around her, and remote web services, enabling her to easily define, execute and monitor complex tasks, in ways that can only be accomplished today by painstaking, design-time integration.

1. Universal Plug and Play, http://www.upnp.org/
2. DAML Services, http://www.daml.org/services/

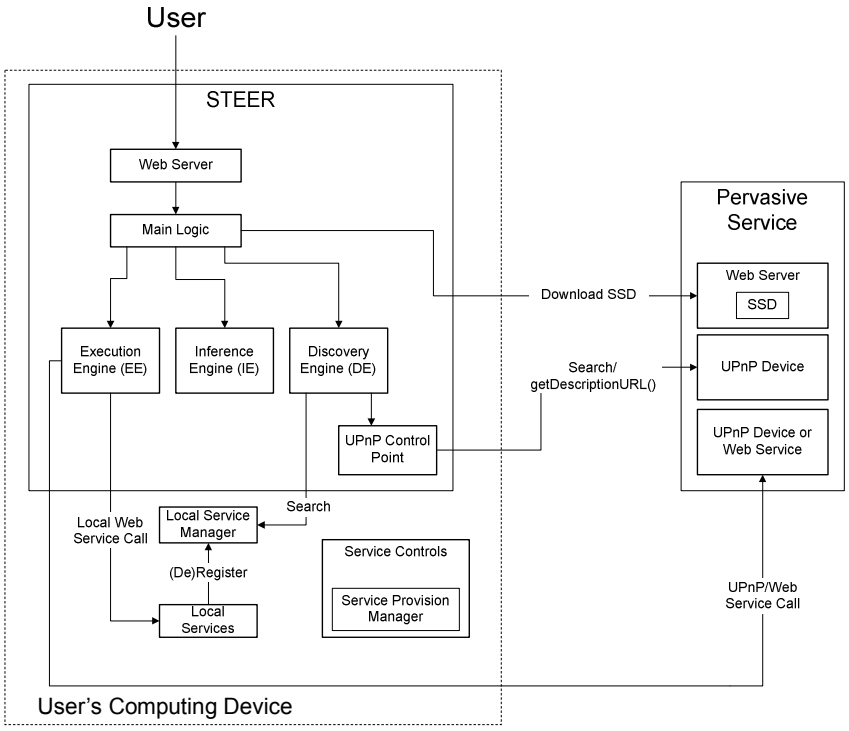


**Fig. 1.** Architecture of Task Computing Environment:

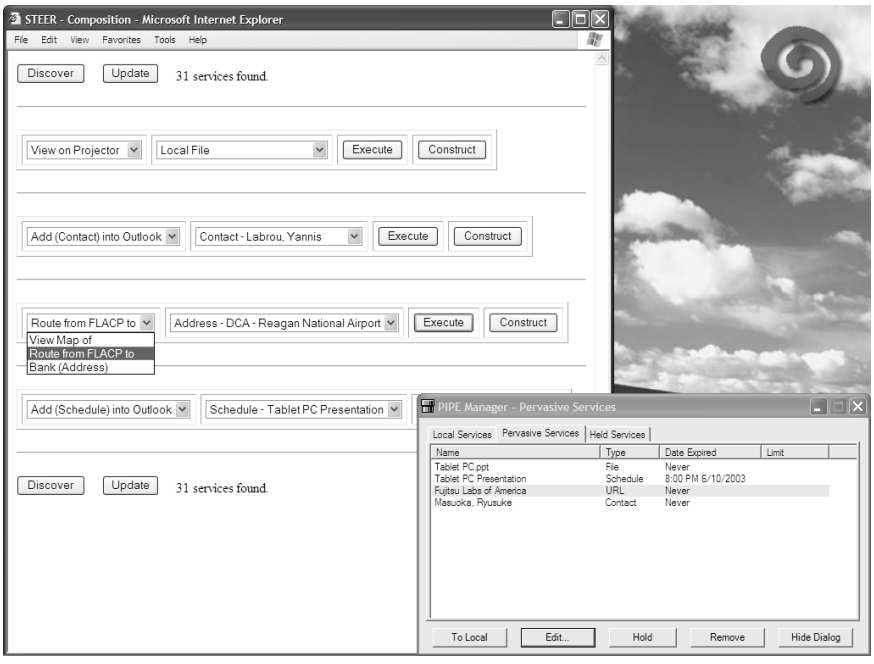


**Fig. 2.** Screenshot of Task Computing Environment (TCE) Client Desktop