Semantic Web Enabled the Context Information in Ubiquitous Computing System *

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ABSTRACT

In Ambient intelligence environment, the surrounding and the available information is hoped to be found, utilized and reacted actively, thus improved the distributed human-machine interaction ways greatly, in other words, the application of context aware technology in ubiquitous computing system has great application scene. In this paper, we developed an Intelligent environment called the personified home service system, which we have implemented using standard Semantic Web (RDF, OWL, DAML), Web Services (SOAP, WSDL) and pervasive computing (UPNP) technologies. Extending the human-machine interaction, home devices such as sensor, TV and refrigerator could be used as interactive device not only Mouse and CRT. It offers an incentive to device manufacturers to incorporate semantic web technologies into their devices in order to get the benefits of easier and more flexible use of their devices' features by end-users. For extensive intelligence in the system, the Semantic Web can assist the evolution of human knowledge as a whole. We analyze user's daily record and predict the user's interest, and find user's potential interests through feedbacks. The Semantic Webs will bring structure to the meaningful content of Web pages, creating an environment where software agents roaming from page to page can readily carry out sophisticated tasks for users.

Keywords: Semantic Web, Ubiquitous Computing, Context Aware, Human Machine Interaction, and Agent.