

Simulation Results of Inter Radio System Handover for Cognitive Radio

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Biography

Seishi Hanaoka received B.S. and M.S. degrees in Engineering from Osaka University in 1994 and 1996. He joined Hitachi Ltd., in 1996. He has been engaged in research on mobile wireless communications systems and cognitive radio systems. He currently works at the Hitachi Central Research Laboratory. He is a member of IEICE.

Abstract

Cognitive radio system consists of multiple wireless accesses that cover overlapping area, and cognitive terminals that use one or more of the wireless accesses simultaneously. In this paper, we propose the architecture of the cognitive radio system, and the inter-system handover protocols. In the proposed architecture, each cognitive terminal, that has multiple radio systems, operates with a single local IP address. The control sequence and packet format are designed to achieve fast handover among the radio systems. Based on the proposed architecture, we have developed a simulator with WiMAX and wireless LAN. Through simulation, we have proved that systems load balance was achieved between WiMAX and wireless LAN, and total system capacity was increased with using proposed architecture.